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THE RAILWAYS —OF— Western Australia

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Their purpose, performance and promise.

WRITTEN AND COMPILED BY

TRANT CHAMBERS.

Issued in agreement with the Hon. the Commissioner of the Western Australian Government Railways.

OCTOBER, 1895.

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MAP SHOWING RAILWAYS OF WESTERN AUSTRALIA

Miles

REFERENCE

Railways constructed shown thus
" under construction
Railway stations & names
Refreshment stations R
Telegraph " T
Goldfield Boundaries

MURCHISON G F
EAST MURCHISON G F
YALGOO G F
NORTH COOLGARDIE G F
EAST COOLGARDIE G F
COOLGARDIE G F
YILGARN G F
DUNDAS G F

INDIAN OCEAN
SOUTH WEST

Mt Hale
Mt Russell
Mt Murchison
Mt Luke
Mt Farmer
Mt Charles
Mt Gibson
Mt Stirling
Mt Belches
Wangine Sook
Tallering Peak
Coonahmoudey
Wyemandoo
Meckering
Cue
Lynton
Port Gregory
Northampton
Mullewa
Greenough Riv. Crossing
Newmarracarra
Geraldton
Houtman Rocks
Wiley's
Walkaway
Dongara
Mingenew
Yandanooka
Arrino
Three Springs
Carnamah
Coorow
Marchagee
Watheroo
Coomberdale
Moora
Koogan
Gillingarra
Mogumber
Wannamal
Cullalla
Mooliabeeneg
Cingin
Bejoording
Chandala
Toodyay
Newcastle
Northam
Muchea
Guildford
York
Perth
Fremantle
Rottnest I.
Kelmscott
Rockingham
Jarrahdale Jn.
Serpentine
N. Dandalup
Pinjarra
Coolup
Drake's Bk.
Waeerup
Cookernup Bk.
Harvey
Williamsburch
Morrington
Brunswick
Australind
Collie
Bunbury
Dardanup
Boyanup
Ludlow
Donnybrook
Busselton
Bridgetown
Augusta
Beverley
Mt. Kokeby
Brookton
Pingelly
Popanying Pool
Cuballing Pool
Narrogin
Arthur R.
Buchanan R.
Wagin Lake
Lime Lake
Round Pool
Katanning
Broome Hill
Tambellup
Pootenup
Cranbrook
Round Swamp
Kendenup
Mt Barker
Hay R.
Albany
Torbay Junction
Knutsford
Southern Cross
Yellowdine
Coolgardie
Kalgoorlie
Esperance
Parkers Rd.
Burracoppin
Merredin
Hines Hill
Tammin
Doodlakine
Youndegin
Bodallin
Killerberrin
Meckering
Cowcowing Lake
L. Deborah
L. Brown
25m. Rocks
Mt Belches
Doubtful Isld Bay
Doubtful I.
Starvation Boat Har
Archipelago of the Recherche
Cape Le Grand
Cape Naturaliste
Cape Mentelle
Cape Hamelin
Cape Leeuwin
Rottnest I.
Garden I.
Beagle I.
Green I.
North Hd
Jurien Bay
Island Pt
Cape Leschenault
Cape Vlaming
Cape Bouvard
Cape Riche
Point Irby
Bald I.
Eclipse I.
Breaksea I.
Vancouver Pen.
King George Sound
Black Head
D'Entrecasteaux Pt
Cliffy Hd
Nuyts Pt
Hamelin Bay
Flinders Bay
Black Pt
Mistaken Is.
Bluff Pt
Wonganella
Wongan Hills
Bompas H.
Murchison R.
Moore R.
Greenough R.
Irwin R.
Arrowsmith R.
Yarra Yarra L.
Lake Preston
Leschenault Inlet
Koolinup
Nonnerup
Yoongarillup
Wilyabrup
Cowaramup Pt
Naturaliste Pt
Geographe Bay
Capel R.
Ferguson R.
Collie R.
Preston R.
Gordon R.
Frankland R.
Warren R.
Blackwood R.
Donnelly R.
Shannon R.
Deep R.
Young R.
Oldfield R.
Stirling Ra.
Ravensthorpe
Hamersley
Gairdner R.
Culham Inlet
Mt Charles
Bremer B.
Cheyne B.
Knob
Brooke's Inlet
Nornalup Inl.
Irwin Inlet
Miller Pt
William B.
Watsons Inlet
West Cape Howe
Tor Bay
Bald Hd
Geelvink Channel
Greenough Rd
Bokara
Yarra Yarra
Strawberry
Lockier
Irwin
Moore
Swan
Midland Railway
Great Southern Railway
Cue Railway
Southern Cross Coolgardie Railway
Tammin Railway
Yilgarn Railway
Doodlakine Railway
Eastern Railway
Mullewa Railway
Westrail
Bowes
Ryans
McGuire
Mercys
Oakabella
Taylor's
White Peak
Glenfield
Chapman
Saceco
Tank
Moonyoonooka
Mullewa
Bootenal
Leander Pt
Beverley (Terminus of Government Line (Eastern Railway))
Warnbro Sd
Robert Pt
Garden I.
Rockingham
Waterman Pt
Point Peron
Woodman Pt
Success Hill
Kwinana
Mundijong
Serpentine
Pinjarra
Coolup
Waeerup
Harvey
Brunswick
Australind
Collie
Bunbury
Dardanup
Boyanup
Ludlow
Geographe
Dunnsborough
Busselton
Donnybrook
Greenbushes
Tin Fields
Bridgetown
Augusta
Flinders Bay
Mistaken Is.
Black Pt
Hamelin Bay
Wonganella
Wongan Hills
Bompas H.
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Yarra Yarra
Strawberry
Lockier
Irwin
Moore
Swan
Midland Railway
Great Southern Railway
Cue Railway
Southern Cross Coolgardie Railway
Tammin Railway
Yilgarn Railway
Doodlakine Railway
Eastern Railway
Mullewa Railway
Westrail

115° 117° 119° 121° 123°
26° 28° 30° 32° 34°

10. 9. 95

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1895

ADDENDA ET CORRIGENDA.

Page 9.—Since the paragraph on "Administration" was written, Mr. M. E. Jull has been appointed Under-Secretary of Public Works, that office being separated from that of Under-Secretary of Railways held by Mr. Alpin F. Thomson.

Page 27—Seventh line from the bottom, the figures should be £2,092,372—not £2,092,685.

Page 27.—Third line from the bottom, after the words "for public works," add "only £64,048 having been provided out of General Revenue"

Page 28.—Add to the end of the first paragraph, which closes on line 9, the following sentence :—"But the balances of various loans unexpended on that date amounted in all to £643,658, being money available for further works."

Page 29.—Line 18, "arborial" should be "arboreal."

Page 31.—Line 2, for "invigorating" read "exhilarating."

Page 31.—Line 11, for "has been erected," read "is being erected."

Page 40.—Last line, for "background" read "backbone."

Page 59.—Line 12, for "actually" read "actively."

Page 61.—Lines 25 and 26.—There are now nine agricultural areas in the vicinity of the South-Western Railway, comprising in all 283,518 acres. Add to the particulars given, the Uduc Area, adjoining the Harvey and comprising 12,000 acres.

Page 63 —The Serpentine Agricultural Area comprises 13,980 acres, and has now been thrown open.

Page 82—The number supplied of coloured maps of the Midland Railway route is insufficient for the whole issue of this book.

Page 86. — Lines 5 and 10. — Through inadvertence the prefix "Honourable," to which he is permanently entitled, has been omitted before the name of Mr. J. A. Wright, Managing Director of the West Australian Land Company.

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"*In our passage from subordination to independence we are fired with the hopeful expectation of incalculable change.*"

"*Ideas, not facts, rule the world; and to an expansive view of our future destiny, not a slavish adherence to practicalness—mere road-making for instance—shall we owe the impulse of true national progress.*"

"*The poor man who finds life painful and the acquisition of land in these crowded countries utterly beyond his power, has only to transfer himself to the New World, where land is cheaper, and he is at once enriched as much as if he had received a legacy.*"

From "The Expansion of England," by
the late PROFESSOR SEELEY, of Cambridge.

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PREFACE.

IT is the purpose of this hand-book—while having for its first object to describe the railway system of Western Australia and explain its working—to contribute towards the occupation of the soil of the colony and the consequent development of its productive resources, by pointing out the facilities the various lines afford for access to areas suitable for settlement. In the spirit of the soundest policy of nation-making, it is conceived that the dissemination of information of this kind by a cheap, handy and popular medium and in a readable form, cannot fail to conduce to this end. Especially is it desirable to correct, by any and every means, the vastly erroneous impressions regarding the colony, originating in the uninformed past, which are still abroad. So long unknown, undeveloped, Western Australia, in the absence of evidence to the contrary, has, up to yesterday, been regarded, even by its own residents, for the most part as a difficult and dangerous country—if not absolutely barren, at any rate generally worthless for occupation. Whilst, in the light of recent developments, local opinion on this head may be taken to have completely changed, it is a regrettable fact that this depreciatory view still obtains largely in the outside world.

All who have travelled in the colony, and to whom opportunity for judging of the productive capabilities of its soil has been afforded, are well aware how contrary to the truth is the impression, general in the past, that Western Australia is little better than a vast desert. With the grant of autonomy a new era opened for this long-neglected, much-abused country. The rich discoveries of gold which have since brought its name prominently before the world, have given full effect to the general potential advantages of the constitutional change. The time has now come to make known as widely and loudly as possible the other resources of the colony, with the view of inducing agriculturalists and others concerned with raising products of the soil, who can find no satisfactory outlet for

their capital and energies in older and more crowded countries—such as England, for special instance—to transport themselves and their capabilities to this colony, where a living on the land is to be had under fairer and easier conditions.

A description of the railway system of Western Australia, with current comment as to the character of the country to which it gives access, and with a glance at projected and probable extensions, may also, it is thought, suffice to make clear to those unacquainted with this part of the world, that intending settlers herein need have no fear of that terrible isolation of the "bush," the dread of which is certainly one of the principal drawbacks to immigration from the British Isles, the inhabitants of those much-peopled parts being naturally of gregarious inclination. In providing for associated homestead settlements in defined areas carefully selected as suitable for agricultural operations, the Government of the colony has secured the new settler in this land from that total separation from his kind which has been the lot of so many pioneers in the Australian "bush;" while the railway has made communication with civilization easy for the worker in the remoter districts, at the same time that it has given him access to markets for his produce. How this work is being carried forward the reader will discover in the following pages.

A perusal of this manual will, it is hoped, show that what has been accomplished in the way of developing this virgin country by means of the iron road has been well done; that the extensions being made are all in the right direction, and that the money borrowed by the colony for construction and equipment of railways has been spent to the purpose—well, wisely, and without waste.

I desire to cordially acknowledge the assistance I have received in the collection of the official information contained in the following pages, from the Hon. the Commissioner of Railways, and all the other officers of the railway department, as well as from other Heads of Departments in the public service.

TRANT CHAMBERS.

Perth, Western Australia,

October, 1895.

INTRODUCTION.

The following remarks dealing with the railways of the Colony and taken from the Annual Financial Statement for the year 1895-6, made by the Hon. the Premier and Colonial Treasurer of Western Australia (Sir JohnForrest, K,C.M.G., M.L.A.) in Parliament, on August 8 last—form a fitting introduction to the main contents of this book:—"I think that the success which has attended the efforts of the Government and Parliament in giving cheap and rapid means of communication to so many parts of the colony, is a fact which is most encouraging and satisfactory. Our railways are turning out a great success, and this, I think, should dispel all those fears and doubts that so many had, as to the probable success, or rather wisdom, of constructing railways throughout this vast colony. I think these fears and doubts have, to a large extent at any rate, been removed. We find, I am pleased to say, that the railways to agricultural districts, if worked economically, and with care, can be made to pay directly, or, at any rate, can be worked without loss to the country. That is a fact, I think, we cannot too often bring our minds to dwell upon, because it shows that we need not be afraid to extend the facilities of transit to other agricultural centres similarly situated. In 1890 there were only 183 miles of Government railways constructed, and only 15 miles under construction. In 1895 we had 570 miles constructed, and 382 miles under construction, or about to be constructed. That is surely a splendid record for four years, and that, too, does not include 243 miles of the West Australian Land Co.'s railway, nor the 276 miles of the Midland Co.'s railway.

"In the first financial Statement which I made to this House on the 4th February, 1891, I expressed much surprise that the revenue from our railways had reached £53,000. It seemed to me then that the amount was enormous; but to-night I find myself face to face with the gratifying fact that the revenue

from our railways for the year ended 30th June last, amounted to £295,732. This is surely good enough ; but best of all I find that the expenditure for the year was only £183,940, thus showing a saving on the year's transactions of £111,792, an amount sufficient to pay the interest and sinking fund on a sum of two and a half millions of money, which is more than our railways have cost. These facts are most encouraging and sstisfactory. The revenue for the coming year is estimated at £360,000, and I think we may take it that the estimate will be reached, because the estimates of the Railway Department have always been very reliable, and I feel confident that they will prove so again. This Estimated Revenue is made up as follows :—Eastern Railway, £153,000 ; South-Western Railway, £29,000 ; Yilgarn Railway, £136,000, and Northern Railway (including Northampton, Walkaway and Murchison) £42,000, making a total of £360,000. The estimated expenditure to produce the estimated revenue of £360,000 is £226,900. so that it is estimated that the receipts will exceed the out-goings by £133,100.

"Here I must say—and I do this only in common justice—my thanks and the thanks of the country are due to the Commissioner of Railways and to the General Traffic Manager for the way they have managed our railways in regard to the receipts and expenditure. It seems to me that great things have been accomplished. What pleases me most is the fact that our railways earned £295,732 with an outlay of only £183,940. I am delighted with these facts, and hon. members will be delighted with them also. It is only an indication of what we shall be able to do in the future, and it shows what we may do in regard to railway extension throughout the country in the future."

Since the above statement was made, the figures showing the revenue, expenditure and profit on the working of the Government railways for the year ended June 30, 1895, have been corrected to the exact amounts (see page 26). The alterations are, however, unimportant.

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RUBBER STAMP MAKER.

J. B. CART.

HENRY STREET,

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—SHAKESPEARE (*Winter's Tale*).

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OFFICES:
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ST. GEORGE'S TERRACE,

TELEPHONE NO. 46.

GENERAL INFORMATION.

ADMINISTRATION.

The Government Railways of Western Australia are under the supreme control and direction of a member of the Cabinet, who is styled the Commissioner of Railways, and also fills the Ministerial position of Director of Public Works. The Hon. H. W. Venn, M.L.A., is the present occupant of this important office, which he has held since the inauguration of responsible Government in the colony five years ago. The Under-Secretary of the Public Works Department, Mr. Alpin F. Thomson, is also Under-Secretary of Railways. The Engineering Branch is presided over by Mr. C. Y. O'Connor, M.I.C.E., the Engineer-in-Chief of the colony; while Mr. John Davies, with the title of General Traffic Manager, is at the head of the Working Railways Branch. Other chief officials of the Department are—The Engineer-in-Charge of Existing Lines (Mr. W. M. Dartnall), the Accountant (Mr. Carl Fuchs,), and the Locomotive Superintendent (Mr. W. Mather). There is one District Manager in charge of the traffic on the Northern lines, and one on the South Western lines.

The offices of the Minister and the Under-Secretary are in the Government Buildings at Perth, while the head-quarters staff of the Working Railways Branch is located in the Perth Central Station Buildings.

LINES OPEN FOR TRAFFIC ON JUNE 30, 1894.

Government Railways—		Miles.
Eastern Railway	Fremantle to Beverley, with Newcastle Branch.	124
Northam and Yilgarn	Spencer's Brook Junction to Southern Cross.	176
South-Western	Perth to Bunbury with branches to Busselton, and Donnybrook.	162
Northern	Geralton to Walkaway Junction, Northampton and Mullewa.	111
Total Government Lines		573

		MILES
Total Government Lines (brought forward)		573
PRIVATE RAILWAYS—		572
Midland Railway	Midland Junction to Walkaway Junction.	277
Great Southern „	Beverley to Albany.	243
Darling Range „	Guilford to Darling Range.	20
Jarrahdale „	Rockingham to Darling Range.	20
Albany—Torbay	From Albany to Karri timber mills at Torbay.	12
Grand total		1145

THE GROWTH OF THE SYSTEM.

It was during the Governorship of Sir Henry St. George Ord that the railway system of the colony was initiated, by the opening of a line running in a northerly direction from the port of Geraldton to the settlement of Northampton. This event took place on the July 26, 1879 ; and this first line now forms part of the Northern Division.

It was natural that one of the earliest railways built should connect the port of Fremantle with the capital city of Perth. That connection was effected, and the line was opened to Guildford, 8 miles beyond and east of the city and 20 from Fremantle, on March, 1, 1881.

Three years elapsed before the system was further developed. Not until March 11, 1884, was a further advance made eastward of 21 miles to Chidlow's Well, the line going over the Darling Range. The next step was taken when the distance of 48 miles from Chidlow's Well to York, the centre town of an important agricultural district, was covered and the line opened thus far, 89 miles from Fremantle and 77 from Perth, in the following year. The Eastern line, having reached the agricultural country on the further and inland side of the Darling Range, was carried in a southerly direction as far as Beverley, some 20 miles beyond York and 110 from the starting point on the coast. Beverley is the

terminus of the Eastern Division, which at this point connects with the Great Southern Railway, running from Beverley southwards to the sea at Albany.

York being provided with railway communication, it was not likely that the settlers in the equally important neighbouring agricultural district of Northam would rest content without similar facilities. From Spencer's Brook on the Eastern Division, 72 miles from Fremantle, a line 6 miles in length, opened in October, 1886, brought Northam also into connection with the capital and the sea-gate. To complete the service to the eastern cultural areas, it remained to extend the railway system to Newcastle, another considerable settlement. This was done by carrying a branch line from Clackline, a point on the Eastern railway 62 miles from Fremantle, 14 miles in a northern direction. This connection was opened on January 3, 1888. At that time the extent of Government railways open for traffic was 182½ miles, this figure including a connecting link of 17½ miles from Geraldton southwards to Walkaway, opened in July, 1887. At Walkaway the Northern Division of the Government railways connects with the Midland Company's line.

Next was projected the South-Western railway, a trunk line running south from Perth and coastwise of the Darling Range, to Bunbury, the principal centre and sea-port of the fertile South-Western district. No engineering difficulties presented themselves along this route, the line running through easy country. It was opened to Pinjarrah, about half way, and 53 miles from Perth, on May 8, 1893. The remaining stretch of 57 miles, from Pinjarrah to Bunbury, was completed four months later. Bunbury had already (in March 1891) been connected by rail with Boyanup, 15½ miles further south; and from this last-named point to Donnybrook in a southerly direction, and making for the Blackwood River, a line, 10¾ miles long, was run out, which was opened towards the close of 1893. At the end of that year the colony possessed 319 miles of state-owned railways in working order.

The following year, 1894, saw a very large addition to the mileage of the Government railways open for traffic. First and foremost, a most important advance was made eastward by the open-

ing, on July 1, of the Yilgarn Railway—an extension of the Eastern Railway—from Northam to Southern Cross, a distance of 170 miles. Thus was a long stride taken towards Coolgardie, the principal goldfields centre of the colony. This line was avowedly designed to serve the Eastern Goldfields ; and when the remaining gap—a little over 100 miles, between Southern Cross and Coolgardie,—is bridged by the iron rail, the rate of development of the mining industry of the colony is certain to be enormously increased.

Another goldfields line came into working existence in 1894, when, in November, a section, 57 miles long, of what will ultimately be the Geralton-Cue Railway, connecting the principal centre of the Murchison Goldfield with the sea, was opened. This section branches off from the Geralton-Walkaway line at a point some eight miles from the sea-port, and thence runs in a north-easterly direction inland to Mullewa, on the way to Cue.

In 1894, also, besides a few miles of deviation from the Eastern Railway, as it passes over the Darling Range, constructed to avoid the very steep gradients and sharp curves of the original line, an addition of twenty-seven miles was made to the South-Western Division by connecting Boyanup with Busselton, the port at the mouth of the Vasse River. This undertaking was completed on November 21, 1894.

From this last date to June 30, 1895, no further sections of Government Railways were opened, the total mileage in use at the latter date standing at 577 miles, 30 chains. Those who attended the opening of the first railway in the colony, sixteen short years ago, could never, under the influence of the most sanguine expectation to which that event could give rise, have dreamed of the present extensive developments of the system.

FURTHER EXTENSIONS.

RAPID and extensive as has been the development of the Railway System of the colony hitherto, there is every indication that still more striking progress will be made in the immediate future. The policy of bold caution adopted by the Government in regard to railway extension has in immediate view to provide the centres of the two principal goldfields with direct connection by rail with the capital and the world's highway. The construction of the Cool-

gardie line has been taken in hand with such vigour that its completion will, in all likelihood, follow the issue of this book at no great interval of time.

The line to connect Cue, the chief centre of the Murchison Goldfield, with the port of Geralton, separated by a distance of some 260 miles, has, as has been shown, been carried as far as Mullewa, 65 miles on the way ; and a sum of £409,000 has been appropriated on the schedule of the Loan Act of 1894 for the completion of this railway. The route has been surveyed, and, at the time of writing it only remains for the work of construction to be put in hand. A greatly-increased rate of development of the resources of the goldfields must follow their connection by rail with the seaports, giving facilities for the carriage of machinery, fuel, etc., to the mines from the ships ; also for the cheap conveyance of food supplies and general merchandise to the large mining settlements which hitherto have been reachable only by the slow, primitive, costly, and generally inadequate means of horse teams.

The Loan Act of 1894 also sets apart £80,000 for the construction of a railway from Donnybrook, southwards in the direction of Bridgetown, on the Blackwood River, continuing the present line from Bunbury to Donnybrook, and the sum of £60,000 is set down for a railway to the Collie Coalfield, connecting with a near point on the South-Western section. But in the case of neither of these two proposed lines has the route, at time of writing, been definitely fixed.

TRAFFIC DETAILS.

The total amount of freight moved on the Government Railways during the year ended June 30, 1895, was 216,236 tons. The total number of passengers carried during the same period was 1,015,254.

The Traffic Department of the Government Railway System employs altogether over 500 hands, and these employés are paid according to the following scale—Station-masters from £120 to £250 per annum ; clerks, £70 to £250 per annum ; porters, 6s. to 7s. per day ; shunters, 7s. to 9s.; foremen, 7s. to 10s.; guards, 7s. to 10s. As far as these rates of pay are concerned, it is clear that this branch of the service is worked on an economical basis.

PASSENGER FARES.

THE passenger fares for the suburban area—*i.e.* between Fremantle, twelve miles west of Perth, and Midland Junction, ten miles east of the capital—are based upon a rate of 1¾d. per mile, first class; and 1d. per mile, second. For journeys outside the suburban limit the fares on the Government lines are 2d. per mile, 1st class; and 1¼d. per mile second. In all cases a return ticket may be had for a fare and a half. Children under three years of age are carried free; when over three and under twelve, at half-fare. Return tickets for distances not exceeding fifteen miles are available on the day of issue only, or from Saturday or Sunday to Monday. For distances over 15 miles and not exceeding 50 a return ticket is available for seven days. Sixty-one days are allowed for return over a distance of from 50 to 200 miles, and 91 days over any longer distance. Passengers holding single or return tickets may break their journey at any station *en route*.

First-class passengers are allowed to carry 112 lbs. of luggage free, while for second-class passengers the limit is fixed at 84 lbs.

GOODS FREIGHT RATES.

THE following table gives the rates charged for freightage on the Government Railways under the seven heads of the goods classification in force :—

CLASSES AND RATES PER TON.

Dist'nce in Miles	M		A		B		C		1st		2nd		3rd	
	s	d	s	d	s	d	s	d	s	d	s	d	s	d
50	5	0	6	8	8	4	10	10	13	4	22	6	30	10
100	7	1	10	10	12	6	15	0	21	8	39	2	55	10
150	9	2	14	0	16	8	19	2	27	11	51	8	74	7
200	11	3	17	1	20	10	23	4	34	2	64	2	93	4
250	13	4	20	3	25	0	27	6	40	5	76	8	112	1
300	15	5	23	4	29	2	31	8	46	8	89	2	130	10
350	17	6	26	6	33	4	35	10	52	11	97	6	143	4
400	19	8	29	7	37	6	40	0	59	2	105	10	155	10
450	21	9	32	8	41	8	44	2	65	5	114	2	168	4
500	23	10	35	10	45	10	48	4	71	8	122	6	180	10

Class M includes all minerals, stone, gravel, etc. Classes A, B, and C, comprise the various kinds of agricultural produce, as cereals, hay, chaff, etc.; also artificial manures and fertilisers. In the

remaining classes 1st, 2nd, and 3rd, are included all kinds of general goods, rated according to the difficulty of handling them and their lightness in proportion to their bulk.

RAILWAY RATES BOOK.

The Rates Book of the Government Railways is similar in many respects to the railway rate books of the Eastern colonies, and should be in the possession of every trader who does business with the department. It is very complete, containing a large amount of information, and once the principle of working is understood, it will be found to be very convenient and well adapted for the purpose it is intended to serve.

The two great companies connecting with the Government lines, namely, the Midland and the Great Southern, have adopted the Government tariff, with exceptions, and although the companies have not seen their way to acting quite as liberally as the Government, yet they have made many concessions which will be appreciated by the traders and the producers of the colony. The first of the exceptions which the Great Southern insists upon is that all goods under the M, A, B, and C classes (principally minerals and also articles that are or can be produced in the colony), shall be carried at owners' risks, but it is provided that the owners may insure the safe delivery of their consignments by paying a premium amounting to twenty to twenty-five per cent. on the rate of carriage.

On the same line a charge is made for chains, ropes, and sheets when used for the conveyance of goods in classes M, A, B, and C; and for sandalwood the Great Southern have a rate which is equal to 20s. per ton for a journey of 100 miles, and £1 12s. 7d. for 200 miles, as against 15s. 8d. and £1 6s. respectively, charged by the Government.

In the passenger fares the Government also stand lower than do the railway companies. The second-class rate on the Government railways is 1¼d. per mile, as against 1½d. on the two private companies' lines. The first-class fares on the three lines are the same, viz., 2d. per mile, excepting within the suburban area, as before mentioned.

Goods and parcels traffic conveyed over the Government and Midland railways jointly are charged at the throughout mileage rate,

and one charge only appears on the way-bill, *i.e.*, as if the traffic were conveyed locally. The receipts are divided by mileage in the railway accountant's office. In other words, the accountant's office is the clearing-house, and the money received is apportioned to each line.

With the exceptions mentioned, the remainder of the schedules are similar on the whole of the railways of the colony, leaving out of consideration the Yilgarn and Mullewa sections, where the rates are in some instances 50 per cent., and in others double those charged over any other portion of the line.

A concession is made to the small producer, who, under "C" class, many send up to half a ton at actual weight first-class. Under this rate a half ton of produce could be brought from Busselton to Perth, a distance of 160 miles for 10s.

The charge between Perth and Fremantle, which may be put down as a distance of twelve miles, is as follows—

M.	A.	B.	1st.	2nd.	3rd.
Cl.	Cl.	Cl.	Cl.	Cl.	Cl.
1s. 10d.	2s. 10d.	4s. 6d.	5s. 8d.	6s. 6d.	9s. 2d.

Coal is thus conveyed from Fremantle to Perth at the rate of 1s. 10d. per ton.

As regards live stock: For the conveyance of a truck of horses —six animals—the following charges are made—

100 miles.	200 miles.	350 miles.
£3 15 0	£6 5 0	£10 0 0

The average rate for carrying a horse is about 12s. 6d. for 100 miles.

The numbers of small live stock rated as half a truck load are—35 sheep, 45 lambs, 20 goats or calves, 30 pigs.

And the rates for conveying these animals for the half truck are—

100 miles.	200 miles.	350 miles.
£1 10 7	£2 12 9	£4 6 1

For a full truck the rates are as follows—

100 miles.	200 miles.	350 miles.
£2 5 10	£3 19 2	£6 9 2

Agricultural machinery is carried at the rate of £1 14s. 2d. per ton for 200 miles. Mining machinery is railed from Fremantle

to Southern Cross for £2 16s. 2d. per ton, or from Fremantle to Coolgardie at the rate of £3 17s. 8d. per ton.

Rates for the conveyance of vehicles are divided into two classes—for vehicles weighing 25 cwt. and for others weighing over that total. In the first class a vehicle is carried 100 miles for £1 13s. 4d.; 200 miles for £2 10s.; and 300 miles for £3 6s. 8d.

The minimum rate for carrying explosives is 10s. when conveyed in powder vans, and 2s. 6d. when carried in magazines.

The Railway Department affords a much appreciated convenience to the general public, by providing that after the prescribed hours for closing the postal, telephone and telegraph offices, urgent messages will be received and transmitted through the railway telephones on payment of double the ordinary telegraph rates.

On the Government railways there is only regular Sunday traffic within the suburban area, above defined.

As is usual in the case of single-line railways, the running of the trains is regulated by the "staff and ticket" system, the strict observance of which precludes all danger of collision. The Vacuum brake is also in use.

EXISTING LINES—ENGINEERING PARTICULARS.

The following table shows the mileage, weight of rails, gradients and curves on the various sections of the Government railways—

	Mileage.	Weight of rails.	Total length of grades 1 ft. in 100 to 1 ft. in 50.	Total length of grades steeper than 1 ft. in 50	Total length and rate of steepest grade.		Total length of curves of 15 chains radius and under.		Total length of sharpest curve and radius.	
		lbs. per yard.	m. ch.	m. ch.	m. ch.	feet.	m.	ch.	chains	chains radius
Eastern Railway - -	110	60	38 35	20 51	1 42	1 in 30	1	54	10½	12
Yilgarn " - -	130	46¼	47 27		1 47	1 in 60	2	13	10	10
	40	45								
South-Western Railway -	110	46¼	12 54		66	1 in 75			14	20
Geraldton to Northampton -	34	30	4 18	10 64	23	1 in 30	8	07	05	4
" Walkaway -	18	46¼	34		15	1 in 100			15	100
Mullewa Junction to Mullewa -	57	45	24 67		9 66	1 in 50	1	56	39	12
Boyanup to Bunbury - -	16	46¼	30		15	1 in 90		39	13	10
" Donnybrook - -	11	45	67		20	1 in 80		60	19	12
" Busselton - -	27	45	2 4		1 18	1 in 75		27	13	5
Spencer's Brook to Northam -	6	46¼	1 22		20	1 in 80			24	14
Newcastle branch - -	14	46¼	3 68	5 48	85	1 in 40	3	35	28	10

The rails in use on the Government Railways are all of steel, that material having now generally superseded iron for railway lines, on account of its superior strength, hardness and tenacity. They are what are known as "flange" rails, that is, they have a flange or projecting rim on the foot by which they are tacked securely on to the "sleepers," the transverse wooden ties which underlay the rails at frequent intervals, to keep them parallel and firm. It is required of rails that they should possess so much vertical and lateral stiffness as to prevent deflection, and sufficient hardness of surface not to laminate or disintegrate beneath the rolling loads they have to bear, also sufficient breadth or tread-surface to diminish the effect of the crushing and pounding of the wheels passing over them. They must also be as smooth as possible on the running surface to prevent concussion, and be laid at the proper angle. The curves must be regularly bent so as to ensure the accurate tread of the wheels, whilst the joints should be so made that the rails may practically become continuous bars, yet have full freedom to expand and contract, according to the atmospheric conditions, without being loose. It is obvious that the safe and efficient working of a railway depends fundamentally upon the care taken in laying and maintaining the permanent way, and upon the selection of the right kind of rails for the traffic on the road.

The "sleepers" in use on the Government Railways are principally of jarrah, a most durable timber and impervious to moisture, and the attack of insects. It is found in any quantity on the slopes of the Darling Range; and the abundant supply of this most serviceable of woods close to the line is an important element in favor of the economical construction of railways in West Australia.

Ironstone gravel, which is also found in parts of the colony, is used for ballasting the permanent way, for which it is eminently suitable, being clean and hard and not liable to pack into a solid mass obstructive to drainage. The object of ballast on a railroad is to transfer to a large surface the pressure applied to the rails by the passing trains, to hold the sleepers in place, both horizontally and up to the proper plane level, and to impart elasticity to the road bed, at the same time allowing free drainage of the permanent way.

As showing what is required of the permanent way, the average weight of the trains run on the various sections of the Government Railway system may here be stated. On the Eastern Railway, the average "mixed" train (passenger and goods) weighs 115 tons, the goods train 109 tons, the mail train (passenger) 74 tons, and the ordinary passenger train 63½ tons. On the other sections all the trains are "mixed," and their average weight varies from 223 tons on the Northam-Yilgarn line, to 146 tons on the Geraldton.Mullewa line, 139 tons on the South-Western railway, and 40 tons on the very very light lines (laid with 30 lb. rails) from Geraldton to Northampton. The oldest line in the colony is thus shown to be behind all the others as regards carrying capacity.

In the building up of the Railways of Western Australia the engineers have been confronted with no difficulties, save that of steep gradients over the Darling Range, therefore, there is no list to present of important works of construction. Of the works completed may be mentioned a tunnel at Greenmount of of 16½ chains length, which cost £12,924; Goodsheds at Fremantle, 500 ft. by 60 ft., and at Perth, 450 ft. by 30 ft., erected for £5,000, and £2,242, respectively; and the station buildings at Perth (£7,532) and Bunbury (£13,408). To keep place with the development of the system, the station buildings at Perth will shortly have to be considerably enlarged and new and extended offices built for the headquarters' staff. A wooden bridge, with four spans of 50 ft. each, and fourteen of 30 ft. each carries the line across the Swan river at Fremantle, and one with twenty-seven spans of 30 ft. each supports the Eastern line over the same stream between Perth and Guilford. There are three smaller timber viaducts over Deep Creek and one over Mahogany Creek, on the principal deviation (No. 1) made to avoid the steep grades of the original Eastern line where it traverses the Darling Range. An iron bridge with one span of 70 ft., built at a cost of £2,126, carries the roadway of Barrack-street over the railway at the east end of Perth Central station. A few other timber bridges on the inland lines fill up the tale of works completed.

Among the works in progress in connection with the Railway System may be enumerated :—extension of the Jetty at Geraldton,

in view of the inland traffic from and to the port as the line to the Murchison goldfields is pushed on, for which £11,200 has been provided ; erection in Perth goods yard of a market building, 256 ft. by 100 ft., of brick and iron, together with a cold storage building, 160 ft. by 50 ft., adjoining, the two to cost £12,393 complete ; reduction of the steep grades on Darling Range section of the Eastern railway ; provision of a water supply service at Midland Junction at a cost of £1,736 ; erection of a new station New castle for £3,500 ; addition to the Customs shed accommodation at Fremantle, £1,600 ; widening of the bridge over the Swan at Fremantle, to allow of projected duplication of the line ; building of station and laying of sidings at Picton, the junction of the Donnybrook and Busselton extensions on the Western line ; extension of Albany Jetty to allow vessels of deep draught to bring up alongside.

LOCOMOTIVES.

Various types of locomotives are in use on the Government Railways, and the total number of engines running on August 1, 1895, was 50. The most powerful class is the "K" tank-engine with 2-wheeled bogie leading, and 4-wheeled bogie trailing, weighing 53 tons, and having a traction power of 16,770 lbs. The diameter of the cylinders is seventeen inches, with a piston stroke of twenty-one inches. With eight wheels coupled, of a diameter of 3 feet 1 inches each, and a weight of 720 cwts. on the coupled wheels, these engines have great hauling power, but are not designed for speedy running. This class was manufactured by Messrs. Neilson & Co., of Glasgow, and is doing satisfactory work on the heavy grades of the Eastern Railway. The "J" class, of which kind there are only three, is a 6-wheel-coupled engine, the diameter of the coupled wheels being 42 inches. These were built by Messrs. Kitson & Co., of Leeds, and are capable of a higher rate of speed than "K" locomotives, with a tractive power of 10,780 lbs., with 105 lbs. average steam pressure. There are seven of the "A" class locomotives with 4-wheeled tenders, and three with 6-wheeled tenders. These have a 2-wheeled bogie leading, and six wheels coupled, of 39 inches diameter, and weighing 19 tons 12 cwts. without tender with a tractive power of 7754 lbs. The "G" class comprises twelve six-wheeled

coupled locomotives with tenders, having, with 105 lbs steam pressure, a tractive force of 11,321 lbs. This is a useful class designed and built (eight) by Messrs. Beyer & Peacock, of Manchester and four by Messrs. Martin & Co., of Gawler, South Australia. Besides the principal types of locomotives here mentioned, there are several kinds making up the total, differing in tractive capability from the "H" class tank engine, of 4,410 lbs., to the "L" class tank engine having a tractive power of 11,984 lbs. With the exception of the "K" class, described above as having eight wheels coupled, and one tank engine, class "D," as well as a "Fairlie," with four wheels coupled, all the locomotives running on the Government lines have six wheels coupled. Two "express" engines, however, under order, for running the mail train are to have four wheels coupled of 54 inches diameter, giving the facility for higher speed. Of the useful "G" class ten more are being manufactured to meet the requirements of the increasing traffic, three in South Australia, and seven in Glasgow.

CARRIAGES AND WAGGONS.

THE very considerable increase of the Government trunk lines is making large demands on the supply of available rolling-stock, particularly trucks, and on August 1, 1895, 50 high-side waggons, 50 low-side waggons and as many timber floats were under order. The carrying capacity of the ordinary truck in use is six tons, but there are some freight waggons, running on bogies, of double that capacity.

Different descriptions of vehicles for the passenger traffic are in use, of course, from the gorgeous State Saloon Car, built in the workshops at Fremantle, and the luxurious Ministerial Saloon Carriage, manufactured by the Birmingham Carriage and Waggon Co., down to the humble but indispensable passenger brake van. Two mail vans and an inspection car have also been turned out at the Fremantle Workshops, and are found satisfactory in every respect, showing that the department is, in this respect at least, not entirely dependent on the outside manufacturer.

Ten American saloon and ten "Gilbert" saloon carriages are run on the suburban lines having capacity for 52 and 40 passengers respectively; while the rest of the passenger traffic is borne in 15

composite bogie carriages (first and second class) seating 50 passengers each, ten of the same kind, but with a brake compartment, seating 44 each, eight "Clemison" carriages seating 44 each, and 19 four-wheeled coaches seating 22 each. Including the carriages and waggons enumerated, together with sheep vans, horse-boxes, cattle trucks, vans for covered goods, gunpowder, cold storage and meat, water tanks on wheels, lime ballast and mineral waggons, there were 1,538 vehicles on the record of carriages and waggons on August 1, 1895; while 181 more were under order at that date—consisting of the 150 trucks above-mentioned, and 20 of the comfortable composite passenger carriages (first and second class), with 11 brake vans for passenger trains. It is safe to predict that before long needs of the traffic will necessitate further large orders of new rolling stock for the Government Railways, and it may be taken as certain that improvements in the lighting of the passenger trains, and also prehaps in providing softer seats and backs in the second-class compartments, as well as in some other directions connected with the accomodation of travellers, will be effected now that they are recognised as necessary.

THE WORKSHOPS.

Although the Railway System of Western Australia has not yet arrived at that stage of development when the Department controlling it can undertake the construction of the requisite locomotives and rolling-stock, it hardly needs demonstration that, in connection with so large a system, there must be always a great deal of repairing to be effected, as well as renewing of parts. Also, as the imported engines and carriages and waggons are landed in the colony more or less in pieces, the parts require to be put together on arrival, and the whole put into running order, consequently workshops on a somewhat extensive scale, with a staff of skilled artisans in various branches of mechanical work, are a necessity.

The Government Railway Workshops, controlled by the Engineer-in-chief as supreme head, are at present located at Fremantle, under the immediate superintendance of Mr. W. Mather, ably assisted by Mr. R.B. Campbell. The growth of the system, however, is making such heavy demands on the present establishment that enlargement in every direction has become imperatively

necessary. For instance, in the blacksmith's shop, a very important department of the works, there is barely room for the nine fires in use, whereas there is work for fully twenty, while in the large shop the wood-workers and iron-workers are elbowing each other inconveniently. It is in contemplation to remove the whole establishment to a site more suitable than the present for the purposes of extension. The existing plant can then be increased to keep pace with the new and greater needs arising out of the enormous augmentation of traffic on the line, to the goldfields. Designs have been prepared for new shops, with a covered area of three acres, and a very extensive yard.

In the principal shop, by means of plain overhead shafting, the energy of two forty-horse engines is transmitted to various machines engaged in rolling, punching, shearing, drilling, and other operations in iron-work ; and marvellous to the unaccustomed eye is the sight of cutting, shaping, and drilling holes in metal plates as if they were merely sheets of paper. Waste is sternly checked, and all the scrap iron goes to the "faggotting" furnace, to be put to further use after enduring the ordeal by fire. Showing how far emancipation from dependence on the outsider has, even at this early period, proceeded, engine boilers have been made here ; and it is asserted that all the other parts of a locomotive, with the exception of the wheels and tires, could be cast and wrought in the establishment. The top of the heavy rolling-machine was made in the shops. When the imported engines arrive they are put together in this principal shop ; and, on an average, this job is completed in two days. Under the constant heavy pressure of work, recourse is had to a system of employing the men in double shifts.

As busy as the workers in iron are the workers in wood, at present rather inconveniently crowded into one end of the principal shop. In this corner the circular saw buzzes merrily as it splits up the rough baulks of timber into required proportions. The bodies of coaches and waggons are here fitted upon the frames and wheels imported from England. A great deal of repairing and renewing, too, is always in hand. Constructive work also is carried on. If a carriage or wagon for a special purpose is required without delay, upon receipt of the order by the superintendent of the shops, the work is put in hand at once and the vehicle is speedily turned out in good going order. It is a

record performance of the establishment that when the Yilgarn Railway was taken over from the contractor, an order for 40 wooden water-tight trucks, of a capacity of 1390 gallons each, was executed in a fortnight. The various parts of vehicles are kept in stock, and a sufficient store of timber is always maintained. The native karri, most endurable of West Australian woods, the all-serviceable native jarrah, used for "surface" work, and the strong heavy tuart, of which but a little has yet been found in the colony, fully meet requirements where hard timber is necessary. The light woods for lining the carriages, such as teak and pine, are imported. Perhaps, now that attention has been turned to the immense resources and wealth Western Australia possesses in her forests, it may be discovered that she produces light woods worth handling by the handicraftsman.

Other essential branches of the establishment are the foundry, the coppersmith's shop and the tinsmith's shop. Much has yet to be done to render these fully serviceable and bring the appliances right up to date. But the work of improvement is duly planned, and only awaits the decision as to the future site of the whole establishment, want of space being the principal drawback, In the cushion shop, the upholstery of the passenger carriages receives skilled attention. In the engine shed are housed the locomotives in their intervals of rest; and when their domicile is fairly full, the different types of locomotives in use on the system, from the light "shunter" to the powerful "Class K," goods engine, may be studied. The lifting in the shop yards is performed by three cranes of 3-ton power and one of 5-ton; but often nearly double that strain is, of necessity, put upon them — so far, happily without a breakage. It should be mentioned that the Locomotive Department supplies travelling houses for its workmen—cars conveniently arranged and fitted with bunks and stores so as to afford the men comfortable living quarters when away from home on duty. The efficient working of the Vacuum brake, with which all the trains carrying passengers are provided, is a not unimportant responsibility on the shoulders of the Locomotive Superintendent and his staff.

Boys under eighteen are taken on as apprentices in the workshops, on probation, for six months. Then, if found suitable, they are bound for a period of five years, during which term they are afforded

every opportunity for becoming proficient in the various branches of the mechanical work of the establishment. The technical training is a valuable one ; but of course it depends upon the boy himself, the "grit" that is in him and his mechanical aptitude, whether or not he avails himself of the opportunities given him. It is not out of place here to state that the Superintendent is quite satisfied with the progress and conduct of the boys at present serving their time in the shops. Altogether nearly 500 hands are employed in the shops.

[While these sheets were passing through the press, 16 additional locomotives were ordered to meet the fast-growing needs of the traffic, viz :—5 quick speed passenger engines, 5 heavy goods engines for light rails, and 6 more of the useful "G" class. This brings the total of locomotives running on the Government Railways up to 78.]

FINANCE.

The following comparative figures, giving the results of the working of the Government railways for the periods stated, show the progress made in the extension of the system, and a most satisfactory increase in the business done, with, at the same time, greatly improved economy in working for the year ended June 30, 1895, compared with the one immediately preceding—

	Year ended June 30, 1894.	Year ended June 30, 1895.
Total amount spent in construction and equipment from the beginning to date on lines open for traffic	£1,169,222	£2,092,372
At an average cost per mile opened of ...	£3,642	£3,804
Total mileage open for traffic on June 30	miles—321	miles—575
Gross revenue earned	£140,564	£296,000
Working expenditure	£103,973	£182,046
Profit on working on the year's business ...	£36,591	£113,954
Percentage of working expenses to revenue for the year	73·96	61·50
Interest charge for the year on loans raised to form capital for construction ...	£46,170	£83,096
Net profit for 1894-5 after paying all expenses, and also annual interest on loans for construction		£30,858
Deficiency 1893-4 after paying all working expenses and annual interest on loans for construction	£9,579	
Earnings per average mile open during the year	£438	£538
Expenditure per average mile open during the year	£324	£331
Gross earnings per train mile during the year	52.59d	71.22d
Expenses per train mile during the year ...	38.90d	43.79d
Number of passengers carried during the year	617,080	1,022,248
Goods carried during the year, including live stock	...tons—204,686	tons—255,839
Train miles run	641,080	997,540

The gross revenue for the year was made up of receipts as follows—

Passengers	£47,804	£107,278
Parcels, etc.	£4,530	£7,746
Mails	£12,092	£7,027
Rents		
Miscellaneous		
Goods (including live stock)	£62,005	£155,583
Jetties, Wharfage, etc.	£14,150	£18,366
	£140,564	£296,000

The expenditure is divided up as follows—

Maintenance of the line and renewals of ways and works, being the expenses incurred by the Engineering Department	£20,493	£36,202
Locomotive charges, being all expenses incurred in running the engines and repairing the carriages and wagons	£47,129	£86,453
Traffic charges, being all expenses in the Traffic Department, including compensation	£21,168	£34,325
General charges, being all expenses not included under the other heads	£5,100	£8,666
Jetties, Loco. power, repairs to rolling stock	£10,083	£16,400
	£103,973	£182,046

From this table it is seen that 254 additional miles of line were opened in the latter year. The revenue increased by £155,436, against an increase of £78,073 in working expenses, the result being an increase in profit amounting to £77,363. The large augmentation in receipts, against an increase in working expenses of only a little more than half the amount, turned the net *deficieucy* of £9579 for 1893-4 into a handsome net *profit* of £30,858 for 1894-5. A decidedly satisfactory feature is the very considerable decrease in the percentage of working expenses to revenue, a drop from 73·96 to 61·50. Thus, while the income has grown largely, the proportion of expenditure thereto has been appreciably reduced.

The total expenditure of the colony on all railways, opened or in course of construction, up to the date mentioned, is returned at £2,092,685—not a large sum considering that there were 575 miles of line open on that date, and looking at the extent of country served. By far the larger part of this amount came from loans raised by the Government for public works ; and the interest payable, averaging the various rates for the several loans, is from 3½ to 4 per cent. In the case of each loan, provision is made also for a sinking fund of 1 per cent.

The earlier loans carrying higher rates of interest, are gradually being converted into a common inscribed stock bearing interest at 4 per cent. The last loan operation by the Government (writing on on Sept 1st.) when a moiety of one million and a half sterling authorised by Parliament to be borrowed, was floated in London, chiefly to provide funds for railway extensions, was very successful. The interest offered was 3½ per cent, and the loan was over-subscribed at a premium of 3 per cent. The total public debt of the colony, on July 30th 1895 was returned as £3,992,681.

As regards the working of the Government railways, the year 1894-5 has ended with a handsome surplus over and above all expenses and interest charge. But there is yet much to be done before the the railway system can be described as thoroughly efficient. The increase of the traffic which accounts for this satisfactory result on the year's operation, also gives rise to many new requirements and carries with it the need of improved methods of working the lines and controlling the running of the trains. Necessary signalling stations and apparatus must be provided. There is much room for improvement in the lighting of the carriages and stations. There is need of more platform and station accommodation. The present accommodation for goods traffic at Perth and other principal centres is palpably inadequate. Increased traffic bring with it many new claims. Taking these points into consideration, there is no cause for wonder that the General Traffic Manager, pointing out that already some £40,000 in the shape of revenue has been sacrificed by reductions in the tariff, has publicly expressed himself as opposed to any further reductions of freight rates or passenger fares, desiring, rather, to see the surplus expended in making the system more efficient all round and thus enabling it to cope with the larger needs arising out of the augmented traffic and the extension of the system. In some quarters it is urged, not without show of reason, that the remuneration of the railway servants, at present rated according to anything but a high scale, should be increased all round, their duties having become generally more onerous and important with the rapid development of the system.

THE SUBURBAN AREA.

It is along the first six to eight miles or so of the line to the port of Fremantle that the future citizens of Perth will make their homes. With the growth of the colony, its capital must become a centre of much business and attendant bustle. The same fate, commercially to be desired, will overtake the main port of the colony. Then those whose sphere of daily labour lies within either centre will establish their homes outside the town limits and seek privacy and quiet in some convenient and attractive suburban retreat. Already have some of the leading men of Perth and Fremantle built them villas along the banks of the Swan river in surroundings of great scenic beauty. Between these two chief centres of population there are, indeed, spots along the reaches of that noble stream, to the attractiveness of which the three essentials of landscape loveliness, namely, hill, wood and water, lend all their varied charms—varied yet exquisitely harmonised. In these localities the great contriver Nature has wrought her effects in her gentler manner. Here she has set up no frowning steeps—the thunder-riven seats of tempest—has planted no awesome forests of gigantic arborial growths, sends no tremendous cataracts thundering down from giddy heights into swirling depths. The scenery of the Swan river is placid. Naturally, with a stream so eminently adapted for aquatic pastimes, yachting is a very popular amusement with the dwellers on its banks. On a summer afternoon or evening it is refreshing to be out on the broad bosom of this lordly stream, that with stately movement and slow skirts Perth and flows serenely on to mingle its tide with the ocean at Fremantle. Only we want just enough breeze to fill the sail and keep mortal flesh cool under the hot sun as we lounge luxuriously in the stern of our small craft.

Entering a train for Fremantle at the Perth central station, the river does not come in sight until the bridge crossing it near the port, is reached. But the line holds something like a parallel course on the right-hand side of the waterway ; and at Claremont, the halfway halting-place where the trains pass, it is no long step from the station to the banks of the stream. Without doubt, Claremont will

be the riverine suburb *par excellence* of the future. Subiaco has the advantage of being some four miles nearer the city ; but, although not wanting in sylvan charms of its own, is not quite so conveniently situated regarding the water-side. After leaving West Perth station, the line to the port passes through a sandy country rather densely timbered with many young trees struggling up among a tangled under-growth. Only small patches here and there are as yet cleared and cultivated for garden growths. One would think there must be rare sports for picnics in those shades amongst the under-wood, many choice nooks for the delightful dual companionship to which young blood inclines, or cool corners for the quiet nap which those of maturer years find so congenial on warm afternoons after midday refection.

But there is nothing of view from the carriage windows until the country opens out as the train proceeds from Claremont to Cottesloe, the next station on the journey. Then, looking to the right over the sand ridges forming the coast line, a glimpse is caught of the sea, gleaming in sheeny glory in the sun-light. At Cottesloe, eight miles from Perth and four from Fremantle, are to be seen more evidences of suburban settlement. Houses are going up around, and, perched on the summit of the hill to the left which separates the rail track from the river, is discernible the Osborne hotel, a favourite place of pleasure resort, reachable with ease from this station or from Claremont. Over that hill, but out of sight from the train, there are many charming riparian residences, occupied by city business men and other of standing in the community ; and they may well be envied the possession of homes in such a charming environment. On the other side of the line, over the sand ridges, is Cottesloe Beach, which is also coming into favour as a residential locality.

Leaving Cottlesloe on the seaward journey, the train, after passing through a short cutting, brings us to a full view of the ocean, spread out immediately to the right, and separated from our track by only a few yards of sand covered with scanty scrub. From our elevation on the side of the rise, whose base runs to the water's edge, we look out over the shining expanse, generally rippling with smiles in the sunshine. And if it be the afternoon of a hot day in summer, the unfailing postmeridian sea-breeze, laden with ozone, and known as

the "doctor" from its healthful influence, will salute us with its invigorating breath. Champagne is not so wholesomely invigorating.

Looking out to sea straight before us, some fourteen miles distant appear the outlines of Rottnest Island, whereon the Governor of the Colony has a pleasant retreat to which he can retire when oppressively warm weather renders residence in the capital unpleasant. To the left of the Island can be distinguished the wreck of the unfortunate barque, Ulidia, which, some years, ago, impaled itself upon one of the many rocks that make difficult the navigation of Gage Roads and the sea passage up to Fremantle.

A fine new lighthouse has been erected on an elevated part of Rottnest Island, and at night the far-reaching flash of its revolving beacon warns the incoming and outgoing mariners as to their bearings. When the train brings us broadside on to the sea, we can discern the long low contour of Garden Island, lying south of Rottnest, and nearer to the mainland, and, seeing how the approach to the port is blocked and rock-infested to south and west, we understand how great care must be exercised in navigating vessels into this haven. Fortunately stormy weather is infrequent on this shore of the Indian Ocean during the greater part of the year.

Shortly before reaching North Fremantle station, we cross the line running from the quarries at Rocky Bay, on the banks of the Swan on our left, out to the north mole of the Harbor Works at Arthur Head. Along this line the stone is carried, of which the breakwater is constructed. North Fremantle we find quite a considerable township, duly furnished with hotels, school, church, and stores of various kinds, and with signs of further growth. Out from North Fremantle station, and we come in sight of the Swan again. Crossing the river from north to south, we are given a view to the left of a long, stoutly-constructed wooden bridge of lattice pattern which carries the road from Perth over the wide stream. This timber viaduct was built many years ago by what may be politely termed compulsory labour.

From this bridge, which rises to a considerable height above the brave sweep of water, is obtained on one side a fine view of the river mouth, with the Harbor Works which are to make Fremantle a safe haven for large craft; while on the other is visible a delightful

specimen of the scenery of the Swan. On reaching the south bank of the river, evidence of progress pointing to large commercial developments in the future meets the eye in the reclamation work being carried on. This undertaking, when completed, is to turn the wide shallows from this point down to the mouth of the stream, into solid ground upon which will be erected wharves and warehouses, to accomodate the extensive shipping trade of the future. On this further side of the river lies Fremantle proper, the second town of the Colony in size and importance, scattered over an area of about three square miles, and having a population numbering some 10,000 souls. A conspicuous feature here is the Town Hall, a fine stone edifice in the High-street, with a clock-tower and bells. Another building rather too much in evidence, and occupying perhaps the best site within the town boundaries, is the great gaol of the colony. This prison was built in the days—happily departed for ever—of the rigid *regime*—the stone and iron age of the colony—when no considerations of delicacy or artistic sensibility were permitted to influence official plans in the Swan River Settlement.

Let us now hie us up to the hill behind the town—Monument Hill yclept. Standing on the summit and looking seaward at sunset on a summer eve, we shall, if we are lucky, behold a wondrous series of changing pictures which Sol Pictor, consummate artist of inexhaustible resource, will present on a colossal scale for our delight. Gorgeous colours he flings up against the light-blue background of sky, with lavish hand, yet with never a mistake. Seizing upon the cluster of clouds which come attendant on his setting, he irradiates them with his own glowing hues, turning them into fiery masses of brilliancy unspeakable. They change their form continually, merging now and now separating, and by his mighty magic he contrives to make each new combination more strikingly beautiful than the last, taking sure and skilful advantage of each shape they assume in their transformation. Then with one last magnificent display of glowing multi-coloured rays shooting high up the sky and changing from red to gold, gold to purple—himself a dazzling orb of flame—he sinks in majesty below the horizon, with one last supreme effort dyeing the western flood a deep rich crimson as if with his very essence and life-blood, So he departs.

Robed in flames and amber light,
The clouds in thousands liveries dight;

William Sandover & Co.,

Perth and Fremantle.

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Robert Smith,

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Then the colours die out adown the sky and on the cloud banks. Only the peaks of those never-trodden mountains, only the pinnacles of those never-inhabited aerial castles, only the summits of those sheer tremendous cliffs of shadow-land—for a little while hold the fast fading glory of the departed source of light. And as we still gaze, silent and entranced, grey neutral tints succeed, deepening into colourless sombreness and overspreading the limitless canvas. So darkness comes on apace.

There are glories of the night, too, to be seen from Monument Hill, when the moon is the illuminant and the expanse of water shines like a silver mirror, in which the image of each star is reproduced.

Fremantle, being the principal port of the colony, at which ships are continually arriving freighted with all kinds of merchandise for the capital, the agricultural districts, the inland towns and the gold fields, is a busy place most days among the shipping. A jetty running some half a mile out into deep water gives berthage to vessels on both sides ; and often there is not a vacant berth to be had. Railway lines from the goods station on shore run out to the sea end of the jetty, so that trucks can be loaded direct from the ship's hold. Close to the shore end of the pier are long customs sheds, wherein the imports are checked and examined. Adjoining the passenger terminus is the principal goods shed, a structure of jarrah and corrugated iron, 500 feet long. On an average four loaded goods trains are sent away eastwards from this station every day, each train consisting of some 30 trucks, each truck carrying 6 tons of freight. This would not seem heavy traffic to manager of, say, a great English railway ; but it is a great deal for a colony not yet containing 100,000 white inhabitants. At present the trend of the traffic is nearly all inland, there being little produce of the colony, except timber, to bring to the port for shipment. The gold export, though so large in value, is, of course, small in bulk ; and special trains are not needed to bring the boxes of bullion from the fields to the vessels that take them to Melbourne. The fact that Fremantle is the Australian port nearest to England, nearer by a week than the principal sea-gates of the colonies further eastward, is a point in its favour that in the future will go far to counterbalance its natural drawback of narrow access.

A word is here due regarding the extensive works being carried on for the improvement of the harbour at Fremantle by the erection of moles to act as breakwaters, and the deepening of the channel at the mouth of the Swan River by blasting and dredging. I cannot do better than once more to quote from the latest Financial Statement made to Parliament by the Colonial Treasurer (Sir John Forrest). He said:—"There has been expended on the Fremantle harbour works up to June 30 last, a sum of £197,776. As you are aware, we have alloted for these works already—and it is not the last that will require to be alloted, as we all know—a total of £350,000, being £150,000 by the loan of 1891, and £200,000 by the loan of 1894. Out of these two sums, amounting to £350,000, there is a balance of £152,224 available at the present time for continuing these works. As every one who has been to see the work must admit and acknowledge, it is a very great work indeed. * * * Those of us who look forward to making Fremantle a good and commodious harbour for all classes of ocean vessels trading from the mother country or elsewhere to this continent, look forward anxiously to the time when this great work will be accomplished. No doubt that time will come. I have the greatest confidence myself in the ultimate success of these works, and already the progress that has been made is very considerable."

A light-tower and signal station crown the boss known as Rous Head, and on this rise a very unpretentious-looking cottage is set apart as a marine residence for His Excellency the Governor.

At this day some twenty passenger trains run from Perth down to Fremantle every week-day, and nearly the same number up from the port to the city, at intervals of about an hour, from early morning. In the time, now near at hand, when the line will be doubled over this twelve miles length, this service will be greatly increased. The inadequacy of a single pair of rails to carry all the traffic to and from the port is being generally felt.

Midland Junction, at the other end of the Suburban Area, and ten miles east of Perth, is, as its name implies, the point where the Great Eastern Railway joins with the line of the Midland Company, which latter from that point runs in a northerly direction for 277 miles to Walkaway, forming a connection with the Port of Geraldton. Guildford, eight miles from Perth, is the principal centre of

settlement within the limits of local traffic on this side of the capital. It is a scattered township, with pleasant rural surroundings, reminding an Englishman much of an Old Country hamlet. There is good land hereabout, and the farming industry is carried on in the district, but in rather slow-going style and according to old-fashioned methods. Now that a new era of development has begun for the colony, the agricultural industry should receive more attention all round, so that the magnificent capabilities of the soil in the more fertile portions of the country may be turned to the best account. Guildford should have a future before it as an agricultural and dairying centre.

Bayswater and East Perth, intervening between Guildford and the capital, are suburban residential settlements that are bound to grow into importance and favour with the development of the city of which they are appendages.

The accommodation generally at the central station at Perth is being found inadequate to meet the rapidly increasing traffic requirements of the railway system, and will soon have to be enlarged. Additional lines of rail for shunting purposes and the making up of trains will have to be laid in the station yard. Also the present station building affords insufficient accommodation for the head-quarters staff of the traffic department, which is properly located here. And before very long a bridge will have to be built to carry the road traffic of William-street over the railway, as a substitute for the present dangerous open level-crossing. The requisite additional office room could, as has been suggested, no doubt be provided by adding wings to the existing main building, without materially affecting its design or spoiling its appearance. In any case the need of further accommodation will have to be met. At Perth, besides an engine house, there is a large customs shed, to which imported goods are brought over the line in bond from the principal ports.

[It does not come within the scope of this handbook to describe the capital of the colony. Admirably compiled guides to Perth are procurable; and it must suffice here to say that the Metropolis of Western Australia is, with the growth of the colony, expanding rapidly to the dimensions of a large city. When much-needed municipal improvements have rendered it clean and healthy, and the buildings on an ambitious scale in course of erection are completed, Perth should have no superior in Australia in point of general attractions.]

GOVERNMENT LINES.

THE EASTERN RAILWAY.

This important section of the railway system of the colony, running from the port of Fremantle through the metropolis and eastward over the Darling Range, taps the agricultural districts about Newcastle, Northam, York and Beverley, all of which centres are on the line. Generally speaking, the limits of the country to which the Eastern Railway proper gives access may be said to be coterminous with the boundaries of the principal and oldest agricultural settlements of the colony.

In Western Australia, the first line running inland was designed to give communication with the mid-eastern portion of what is known as the South-Western Division of the colony. Taking this part of the colony as a whole, it may be said to be eminently suitable for settlement and cultivation, containing as it does large areas of rich soil, and having an equable climate with a fairly regular rainfall. It is now generally recognised that the first and great essential of sound and lasting prosperity for any country is the permanent occupation of the land by suitable settlers, under conditions favourable to the development of the highest productive capabilities of the soil. Towards this end the Government of Western Australia has made a long stride by providing cheap and easy access to the central markets for the agriculturalists of the South-Western Division. Settlement is also liberally encouraged by offers of grants of land in specially selected areas, and also by pecuniary assistance, through the agency of a state-owned Agricultural Bank, to small occupiers who can show that they are making *bona fide* progress by their own exertions. Surely there can be no wiser policy than this!

As regards a market, the rapid growth of the population at the large inland mining centres, where the sandy soil is not favourable to vegetation, is creating a demand for articles of consumption and for produce of all kinds, which has already outstripped the present local supply, and has to be met by imports from other colonies. But

the agriculturalists of West Australia are now awakening to the fact that the populous settlements on the goldfields are providing them with highly remunerative markets at their own doors, so to speak; and, by extending the railway system to the mining areas, the Government, in its turn, is assisting, in the most effectual way, the growers who are sagacious enough to seize the opportunity laid open to them for supplying the gold-seekers.

Long before the existence of auriferous areas in this fortunate country was more than a dream of the solitary enthusiast, the eastern parts of the coastal belt of the colony were discovered to contain rich agricultural land, and were occupied by a farming population. In the chocolate loam soil found in the neighbourhood of Northam and York and Greenhills, and about all the country through which the Eastern railway runs, cereals were first grown more than 40 years ago, and it was soon found that this land would, in a good season, yield from 20 to 25 bushels to the acre. Let but these statements come under the eyes of the distressed agriculturist of England, or any other country, and let him but learn, in addition, that in this country he can have a homestead farm *free*, together with every assistance the Government can give him towards making his holding remunerative, and surely there are no ties of association—strong though they admittedly are in the Mother Country—that can bind him to his heavily-rented and starved holding over there, when he has the opportunity of starting a new life in this bright land, under such promising auspices. In the wide area of Western Australia there is room and to spare for agriculturists from other parts who find it difficult to make even a bare living out of the soil upon which they are now working.

Does the intending immigrant fear isolation and lack of wholesome amusement in the inland parts of this colony? Then let him know that the Government builds agricultural halls in the various country settlements, wherein meetings can be held and the affairs of the community discussed, and that every encouragement is also given towards bringing the settlers together for the salutary purpose of exchanging ideas and ventilating their views in common. Then, on the principle that amusement is necessary for the people as well as mere bread—*panem et circenses*—social gatherings are actively promoted in the various settlements. Agricultural shows are held in

the principal centres in due season ; sports meetings are not unknown up-country ; concerts and theatrical entertainments are frequent; while balls, in addition, give the young people of both sexes those opportunities for meeting and enjoying each other's company, without which the life of a community must ever be wanting in vigorous vitality. The townships are well supplied with hotels, stores, and churches—with necessaries for body and soul, in fact.

Nor is the Government unmindful of the needs of education. State schools are being established in all populous centres, and the standard of public instruction is being assimilated to that of the admirable systems in the neighbouring colonies—models, in this respect, to the world. Where schools cannot yet be provided, owing to the scattered nature of the settlements and the distances the children consequently would have to travel to and from their scholastic duties, itinerary teachers make a round of the settlements, setting tasks as they go, to be prepared against their next visit.

To that part of the Eastern Railway which for some 22 miles runs through the Suburban Area, considerable space has been devoted in the earlier pages of this *brochure*. It now remains to briefly notice the line in its further course eastward from Guilford and Midland Junction. Seated in the mail train leaving Perth in the afternoon, comfortably ensconcened in a corner of one of the first-class compartments of the convenient composite carriages which are run on the long-distance trains, we soon see some of the scars the primitive world has received from civilization in its victorious advance, in the blackened tree trunks lying prone where they have been brought down for clearing. There they lie and rot, those fallen monarchs, until their substance resolves into the earth from which they sprang.

Just before reaching the small town of Guildford, the train crosses the Swan River, with which we here part company, until, on the other side of the Range ahead, we come across its principal tributary the Avon. The rainfall has been heavy lately, and on the left side of the line are to be seen meadows and park-like lands with green slopes of almost English verdancy, upon which the declining August sun shines brightly after a passing shower. Another shower sweeps over the scape, darkening the prospect momentarily, as the train

pulls up at the station. Guilford is the centre of a smiling country, and has its own measure of prosperity, which does not, perhaps, express itself in manifestations of super-abundant energy. An easy-going people evidently inhabit these scattered red-brick dwellings with their look of homely comfort. No long stay is made at Guilford, and the train is soon speeding on towards the Darling Range, now near ahead. Meanwhile, on these flats, water is lying in the hollows as far each side as the eye can see, and the land looks thankful for the abundant satisfaction of its summer thirst. Hereabout is splendid farming country.

Before reaching Midland Junction we pass some rather extensive brick-works. Not long after leaving the point connecting with the Midland Railway, a slackening of speed shows that the ascent of the Darling Hill Range has begun. Midland Junction is only 42 feet above the level of the sea. Greenmount, the next station, is 202 feet aloft ; and we go on climbing past Darlington, Smith's Mill, and Mahogany Creek, small wayside stations, until we reach our highest altitude at Mundaring (1,019 feet). On the ranges we pass through heavily-timbered country ; and the slow rate at which we proceed gives plenty of opportunity, where the scene opens out sufficiently, for observing the view, which, consisting of a succession of dips and bends and hollows, with here and there glimpses of distant wooded heights, is not without charm for the appreciative eye. The gradients over the range are in parts very steep ; but considerable deviation is now being made to ease the running. As we crawl up some of the steep inclines the strain put upon our sturdy tractor is told out on the air by the sharp staccato puffs from the smoke stack, and the locomotive strains like a living being. We have leisure to notice that the sun has not yet sunk behind us, but still shines pleasantly on the heights, keeping at bay great masses of dark rain-cloud, which, as they merge and separate, as if in angry impatience to close upon the scene, show here and there the light of a pure blue sky—such a colour as the painter may strive in vain to reproduce.

As the higher altitudes are reached, big boulders are seen by the side of the line ; and from the appearance of some of the cuttings, it is manifest that a rugged and stubborn conformation has been hewn through. There are signs of a sterner passive resistance by nature

to the ingenuity and determination of man. At this point a change comes over the scene. Up here the clouds are asserting themselves and a rain-mist closes over the hills.

The stations we pass on the Range are, as their names imply, most of them mere sidings for timber mills. Stopping at Smith's Mill, we notice some sturdy youngsters, gathered to see the train pass, and recognise, in their stout limbs and chubby faces the best of advertisements for the climate of the Colony. All along the route are to be seen the camps of the timber-cutters; for here on these hills grows the famous jarrah tree, the wood of which has a world-wide fame for its enduring qualities. The timber-getting industry is evidently being pushed further and further into the hills; and many teams are employed to bring the jarrah logs to the mills at the side of the line, where they are sawn into suitable sizes preparatory to being placed on the trucks.

At Chidlow's Well, 39¼ miles from Perth, and 1,006 feet above sea-level, a halt of ten minutes or so is made for light refreshments, which are supplied in a hotel close to the station. Thence, past Lacey's Mill, Byfield's Mill, and Coate's, to Mount Baker (46 miles from Perth and 965 feet above sea-level) we begin to descend the further slope of the Range, and travel much faster in consequence. By the time we reach Clackline, the junction for Newcastle, the early darkness of a winter's day has closed in. Spencer's Brook, the junction for Northam and the Yilgarn Railway running towards Coolgardie, is reached in three hours from Perth, the distance being exactly 60 miles.

Travelling over the same ground at an earlier hour on a subsequent day, at Mount Baker, the top of the eastern slope of the Darling Range, the observant eye will not fail to notice an apparently well-favoured spot—an extensive clearing with farm buildings and a large dam, amid an expanse of well-tilled country. The soil just here bears the complexion of a light sandy loam, and looks particularly suitable for vine-growing. After leaving Clackline, more open land appears on the left, and substantial red-brick buildings of considerable dimensions give evidence of solid stable settlement. Now and again, as the train speeds along, the granite outcrop, forming the background of the country shows itself; but at Mokine, between

REFERENCE
Telegraph Stations
Refreshment " R
OCEAN
INDIAN
Newcastle
Coorinja
Northam
E. Northam
Burlong Pool
Spring Hill Sdg.
Spencers Brook
Muresk
Woodside
Gregson's
Burges Sdg.
Mackies
Crossg.
York
Hicks'
Gilgering
Dale Br.
Edward's
Crossg.
Beverley
(Terminus Govt Line)
Upper Swan
Clackline
Mt Baker
Coates'
Mokine
Byfield's Mill
Lacey's No 3 Mill
Chidlow's Well
White's Mill
Sawyers Valley
Mahogany Ck.
Smith's Mill
Darlington
Midland Junc.
Greenmount
Guildford
Bayswater
Burswood
Cannington
Kelmscott
Armadale
Wongong
Rockingham
Fremantle
E. Fremantle
Claremont
Cottesloe
Subiaco
Perth
W. Perth
E. Perth
Clarence
Woodmans Pt.
Garden I.
Carnac I.
Mangles B.
Rous Hd.
Arthur R.
Swan Ellen's Bk.
Midland River Railway
Red Swamp Bk.
Jimperding Bk.
Avon R.
Spencers Brook
Mortlock R.
Yilgarn Railway
Helena R.
Canning River
Avon River
Melville Wr.
South Perth
Race Co.
From Bunbury
ENLARGED PLAN
OF
EASTERN RAILWAY
AND STATIONS
1.9.95

Clackline and Spencer's Brook, all hardness vanishes from the view as a healthy-looking patch of ploughed land comes into sight.

Northam, 66 miles from the capital and situated on the Avon River, is a place of importance, being the centre of a long-settled and extensive agricultural district. With a population of about 2000 souls, it may be said to dispute with York the title of the capital of the Eastern district. From this point starts the line to the Yilgarn and Coolgardie goldfields. Consequently, plenty of traffic is always passing through Northam station, making it busy day and night. The land throughout this district has, for the most part, the character of good chocolate loam, a yield from which of 20 bushels of wheat to the acre is considered as nothing out of the common. "If we only have a good season, the soil will grow anything," is the burden of the farmers' song here; and after the rains of the past winter, the workers on the soil in this district have no reason for complaint. Wheat, barley and oats do well here, also any kinds of vegetables; but the tillers of the district are mostly concerned with raising fodder crops, for which the carrying trade of the goldfields affords a good market. Taking Northam all round as representative of the agricultural settlements in the South-Western districts, one may fancy that a British farmer, with his native taste for "a bit of sport" now and again, with a turn for sociability, and in addition, perhaps, with no objection to take part in an "argyment" (so-called) on politics or crops, or any other equally final subjects' would find himself quite at home here. As showing the extent of agricultural country in the parts under review, it may be stated that there is very good land fully 60 miles north-east of Northam.

Following the Eastern trunk line from Spencer's Brook instead of turning off to Northam, passing by the way several sidings where the train stops or not, as the settlers in the vicinity may require, the traveller will find himself traversing large areas of cleared and ploughed land, and will realise that he must be in one of the most fertile districts in Western Australia. And mayhap he will think, regarding all this eastern portion of the cultural belt of the colony, that a pleasant, peaceful life is possible in these attractive surroundings where a rich soil rewards easy labour with a plentiful yield. And surely he will wonder again and again how it is this aspect of Western Australian life is not better known to the outsider, including

the harassed and embarrassed agriculturalist of Great Britain. It is a late season, else the green shoots of the young crops would be seen well above the earth in this month of August.

The country through which the line passes bears a general character of broad slopes and gentle undulations, the summits of the elevations clothed with scrub and small timber. On reaching York, however, 77½ miles from Perth, the hills rise to rather more ambitious altitudes. and the town, with its population of some 1200 souls, is found to lie in the valley of the Avon, picturesquely surrounded by hills of respectable height. York was founded quite in the patriarchial epoch of the colony, the land in the neighbourhood having been occupied well over 40 years ago. It is now the centre of a widely cultivated district; and, besides agriculture, horticulture and viticulture, for which pursuits all the eastern district is suitable, bacon curing is an industry extensively carried on in the settlement. There are, in the vicinity of York, several holdings of over 1000 acres each. Here, as about Northam and in most of the other agricultural parts of the country, the principal business with the farmers is the raising of fodder crops, the demand for horse-feed for the goldfields being far in excess of what the colony can at present supply.

York has a public park and reserves (as "lungs" for the town) conveniently situated and well laid out; and it boasts of a regular "season" of its own, when, during the months of July, August, September and October, visitors from the metropolis, and even some from outside the colony, come up to stay in this pleasant town. In time its salubrious and other advantages will become better known. Then may be expected a large influx of Anglo-Indians and Columbians, as well as other sun-dried folk, to recuperate and find re-invigoration in the pure, fresh air of this region during the "season" mentioned.

The town possesses an Oddfellow's Hall, where public entertainments are given, a Mechanic's Institute, an agricultural implement factory, and a large roller flour-mill, besides several good hotels; while the Government, for its part, is providing extra accomodation for the school children, the increasing number of which, all over the colony, is one of the best and most hopeful indications

of its future prosperity. A new hospital is being erected; and it is satisfactory to notice the vigorous prosecution of street-formation and other municipal works.

Lovers of the beauties of nature will be well rewarded for a visit to these eastern parts during the months of August and September by the brave show of lovely flowers which brighten and beautify, with brilliant and varied hues, the whole face of the country.

Rich agricultural land is to be found at Greenhills, some sixteen miles east of York, and it is safe to predict that in a year or two a branch railway will be carried in that direction which will open up for settlement tracts of country containing thousands of acres, which only await clearing and subsequent tickling with the plough to laugh with abundant harvests. On the Mount Hardy Range, within the distance of a drive from York, specks of gold have been found but not as yet in payable quantities. A more certain source of wealth is indicated in the splendid grapes grown some thirteen miles from York in the direction of Greenhills,

Onwards from York to Beverley, the terminus of the Government Railway serving the eastern districts, the land is favourable for agriculture, being mostly chocolate loam, and having an average annual rainfall of sixteen to twenty inches. Indications of successful settlement are given all the way in the shape of broad stretches of cleared and tilled land bearing a cultivated aspect. Beverley is distant 110 miles from Fremantle, and 98 from Perth; while it is 243 miles on from this point over the Great Southern Railway to Albany on the southern coast. About Beverley, with an altitude of between 600 and 700 feet above sea-level, the soil is rather lighter than about York; but there is no lack of settlement in the neighbourhood, and the erection of substantial dwellings here as at the other centres described, invests the environment with an appearance of solid prosperity, and indicates that those who inhabit these parts have "come to stay."

Having reached the end of the trunk line of the Eastern Railway, we go back over the track as far as Clackline Junction to find the branch line to Newcastle. This off-shoot is some fourteen miles long, and Newcastle is distant 64 miles by rail from the capital. Pleasantly situated on the Avon river, which we here meet with once more, this

township, although it cannot yet pretend to vie with York or Northam in importance, is surrounded with country most favourably adapted for growing vines and fruits of all sorts, and it is bound in the future to rank high as a horticultural and viticultural centre. All the way up the Toodyay valley, running north from Newcastle, the slopes are being cleared for vineyards or orchards ; and in that direction the railway is certain to be continued. That extension will pass through rich country in the direction of the Victoria Plains. The wine made from the grapes grown by Messrs. Bull and Stevens, who have been established in the district some fourteen or fifteen years, stands in high repute all over the colony. And as for fruit, oranges—golden globes in verity—are to be seen on a 6-year-old tree which bears luxuriously. In a sufficiently porous soil of mixed red loam and sand, the roots go down into the water that has sunk through the upper crust of the earth. Light timber is plentiful in the district—principally York gum, salmon gum, white gum and jam-wood. The last-named is reported to be very suitable for fencing on account of its durability and imperviousness to worms and white ants. Dairy-farming and pig-raising are industries that can well be carried on in the neighbourhood of Newcastle ; also stock-raising, at least to the extent of meeting the local demand. The Avon river cannot be relied upon to run all through the summer ; but water for domestic supply and general purposes can be obtained all the year round in plenty from wells and tanks, while springs are to be found among the surrounding hills. A new railway station is being built at Newcastle—truly to "meet a much felt want." Between Newcastle and Clackline Junction the country is roughish and rather wild, but at Coorinja, on the branch line and situated just half way between its two terminal points, a considerable area is planted with vines. Different kinds of wine are made from these grapes, the best known being, perhaps, a red and rather full and sweetish wine, resembling Burgundy in appearance and flavour. During the short pause of the train at Cooringa, evidence is afforded of the progress of the viticultural industry in the vicinage by the remark, addressed to the guard by the consignee of a bundle of plants : "I've cleared him out of vines, and still want a thousand more." Nearer to Clackline oranges growing plentifully are again to be seen.

Mention may fitly here be made of the excellent "Handbook of Horticulture and Viticulture in Western Australia," issued by direction of the Bureau of Agriculture of the colony, a work that should be in the hands of every settler and new-comer for the valuable information it contains on the subjects indicated in the title, including instructions with regard to choice of soils for various products, planting and tending fruits and vines, wine-making, drying, canning and packing fruits and all the thousand and one points and processes connected with the industries treated of. In this useful work also are included the conditions under which land in the colony may be obtained from the Government, as well as the regulations of the Agricultural Bank, the latter a State institution established under Act of Parliament to lend money to the struggling settler on very easy terms.

THE NORTHAM—YILGARN RAILWAY.

THE discovery of rich gold in the interior of the colony necessitated extension of the line from Northam eastward and further inland. At time of writing it has been opened officially as far as Southern Cross, the centre of the Yilgarn Goldfield, 236 miles from Perth, and about 110 miles short of Coolgardie.

Twenty-three miles from Northam, on the Yilgarn line, Meckering is reached, the station for the large agricultural area here specially set apart for *free selection* under the Homesteads Act. The Lands Department at Perth will readily supply intending settlers with all information regarding the conditions under which they may occupy these areas, a number of which have been opened in various parts of the Colony where the land has been found suitable. Briefly put, it may be said that any person who is the sole head of a family, or is a male, eighteen or more years of age, can become the owner of a homestead block of land, of 160 acres, in any of the declared agricultural areas, provided he reside on the ground for at least six months during each of the first five years of occupancy, builds a habitable house on it within two years, and has his holding fenced and at least one-fourth of it cleared and cropped within the first seven years. There are also provisions for leasing Crown Lands of larger extent on very easy terms.

The Government goes even further in the direction of encouraging agricultural settlement in the Colony by providing under the Agricultural Bank Act, as has already been stated, pecuniary assistance for homestead blockers and others holding land, who require a helping hand and can show they deserve it. The money is lent in sums of £50, £75 or £100 to the extent of not more than one-half of the fair estimated value of improvements the settler engages to make. Interest at the rate of six per cent. per annum is charged ; and the borrower is not called upon to begin to repay the principal sum until five years have elapsed. At the end of that term he has to start repayment at the easy rate of one-fiftieth of the principal half-yearly. These conditions, like those for occupying the Crown Lands under any of the regulations, are framed in the most liberal spirit ; and when the terms offered become thoroughly and generally known, settlement on the land, especially on the proclaimed agricultural areas, is sure to receive a great impetus.

The Meckering area contains 80,760 acres, of which number nearly 20,000 have already been taken up. The soil is a light sandy loam with stiff clay below, and is of a quality eminently suitable for the growth of cereals. The cost of clearing is authoritatively put at about £4 per acre. It would be advisable for settlers on this area—and this remark applies to the whole colony as well — to practise what is known as " mixed " farming, and not put all their eggs in one basket as they are generally disposed to do. Intelligent attention given to the varied capabilities of the soil must prove vastly more remunerative. Each farmer, besides growing cereals, should have an orchard and a vegetable garden and should keep some stock. Excellent grain, vegetables and fruit have been grown by the Meckering settlers.

Another proclaimed agricultural area, the Calgie, containing 12,500 acres, adjoins the Meckering Area, and extends in a south-westernly direction almost to York.

No settlements of importance as yet intervene between Meckering and Southern Cross ; and there is little in the scenery to attract the attention of the train-traveller. Besides, the down mail-train leaving Perth in the afternoon, traverses this stretch in the night-time. But if the passenger be of an imaginative turn of mind, he may discover something of a weird sensation in rushing through the silent

"bush" in the dead hours. If there be moonlight and no wind he will observe the stark, silent trees that line the route the whole way, standing as if struck dumb at the sight of this shrieking, roaring, fire-breathing monster, which so ruthlessly invades the privacy of the primeval forest, and comes rushing along as if bringing the end of the world in its trail. If there be a wind blowing, the trees will wave their limbs with sounds of sighing and wailing, as if crying woe on this desecration of their ancient solitude. But most travellers will prefer to take refuge in sleep.

As far as Doodlekine, 142 miles from Perth, there is good soil along the line ; but in these districts the rainfall becomes less certain the further we travel eastwards, and not much can be done in the way of continual and extensive cultivation of the soil this far east until the drawback of want of water is avoided by well-sinking, conservation and irrigation on a considerable, and consequently costly, scale. In time, no doubt, when the more favoured parts of the Colony are all occupied, the water difficulty in the regions outside the belt of regular rainfall will not be allowed to stand in the way of settlement, but will be solved by some of the various means suggested. It is still and ever true that "Necessity is the Mother of Invention ; " also that "Where there's a will there's a way."

Beyond mentioning that Hine's Hill, 155 miles from Perth, is the refreshment station on this part of the line, hot meals being provided, there is nothing of importance to remark of the run of 94 miles from Doodlekine to Southern Cross. The gentle undulating character of the country is preserved all the way along the Yilgarn line, and its general aspect presents little variety. Avowedly a line to the gold-fields, there is as yet little settlement along its course. The future holds the secret of what will ultimately be done with this part of the country.

The position and prospects of Southern Cross, the centre of the Yilgarn Goldfield proper, now that it ceases to be the terminus of the Government Railway system in the direction of the eastern goldfields, and consequently loses the forwarding trade to Coolgardie, may, perhaps, best be deduced from the following extract from the local journal : — "If one allows himself to be influenced by the reasonings of some of our respected townsmen, he will be led into the belief that our once busy

township is fast reverting into its former primeval state. However, such cannot be the case when our local mines employ close upon 250 hands; and with other leases rapidly being opened up there is every reason to believe that in the near future the number of men employed on the mines will be doubled. Menzies, Mount Jackson, and numerous other gold-mining centres rely solely on us for their supplies, both the places mentioned having a rapidly increasing population, the former promising at no distant date to rival in its output of gold that of Coolgardie. In consequence of Southern Cross being no longer the terminus of the line, we are to a great extent losers thereby, but that it will never regain its former prestige is entirely a different question. The mining industry in our midst is as yet in its infancy. It is but little more than five years since the first reefs were struck in Southern Cross, and since then they have developed by leaps and bounds. That there is every indication that they will continue to do so cannot be doubted, and in the near future we may look forward to Southern Cross coming out of any possible momentary depression better equipped for future struggles should they present themselves."

In August last the resident and floating population together of Southern Cross was stated by the warden of Yilgarn (Dr. Black) to number 2000. This gentleman, who has held his present post for four years, states that in that time he has experienced one good (that is rainy) season, when the soil yielded "a superabundance of oat-grass and most beautiful wild flowers." Wheat, even, has been grown at Golden Valley, the earliest settlement of importance on the Yilgarn field. This shows the capability of the soil, even in the mining country—when rain falls.

THE COOLGARDIE RAILWAY.

The continuation of the Yilgarn line from Southern Cross to the world-famed gold mining settlement of Coolgardie is now (September, 1895), in the hands of the contractors, Messrs. Wilkie Bros., who are making very rapid progress with the work, there being no engineering difficulties to be surmounted and the line being fairly level throughout. The distance is 114 miles. At the present rate of progress, the laying of the rails (weight of 45 lbs. to the linear yard) is expected to be completed within one third of the contract

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PLUNGE AND SHOWER BATH ON LATEST PRINCIPLE.

time. The date specified for handing over to the Government the first half of the line, that starting from Southern Cross, is in December next. The remaining moiety is to be delivered, to complete the contract, in September, 1896.

A further extension of 25 miles, from Coolgardie to Kalgoorlie (otherwise known as Hannan's), the latter the centre of a cluster of rich and promising gold-mines, has been resolved upon.

Until the extensive unoccupied areas in the South Western Division of the colony, nearer the coast, which are eminently suitable for cultivation, have been brought under the plough, the question of what (if anything) can be done with the sandy soil of the goldfields—which all lie to the eastward or northward of that division—can hardly arise, save in a purely speculative shape.

To give a correct idea of the importance of the gold-mining industry of the colony, it should be stated that last year (1894) the value of the gold produced within its confines and entered for export amounted to the sum of £787,099, while for the half-year ended June 30th, 1895, it reached the sum of £411,465. The total yield of the precious metal in Western Australia from Jan. 1st, 1886, to the date last given is officially stated at 563,128 ozs., valued at £2,139,889. Not a bad return this for a country yet numbering short of 100,000 inhabitants! It should be remembered, too, that a great deal of this wealth has been won without the aid of first-class mining machinery, and mostly by very primitive methods. To bring the requisite heavy machinery and plant up to the mines, the railway is necessary; and the greatest development of the system for some time to come may be looked for in this direction. Not until the far eastern districts and the other auriferous areas of the colony are connected by rail with the coast, will the system have provided due facilities for the prosecution of the gold-mining industry in Western Australia.

If it be questioned whether there be not too much risk in pushing on the railway lines to these distant inland fields on the strength of what have been principally—and necessarily—superficial finds of treasure, let the following quotation from a recent pronouncement by an eminent authority, stand for reply :—"The immense territory "more than a kingdom in itself—which is gold-bearing in Western "Australia stands without a parallel; and between the thin surface

" envolope, where fragments of quartz and limonite are seen, reef " after reef will be discovered, besides those which show through it, " and are more or less plainly traceable on the surface."

Already, and without any really deep-sinking or careful process of ore-saving—without operations on any large scale or scientific basis—the annual gold yield of Western Australia has risen in value to over three-quarters of a million sterling, and is rapidly increasing. An immense augmentation of output may be expected to follow the equipment of the mines with requisite mechanical means for raising and treating the ore from the reefs. The present yield of gold in all Australia is valued by Mulhall—that man of mighty figures who speaks of gold yields by the *ton*—at 6 millions sterling per annum, or one-fourth of the world's product of the yellow metal. When the annual yield of Western Australia shall have reached the value of a round million, a point to which the colony is rapidly progressing, all that has been and is being done in the carrying of the railways to the goldfields will have been amply justified.

The following figures represent the gold export for the month of August last. The return, which is that compiled by the Collector of Customs, shows that as compared with the export for the previous month (July) there was an increase of 3,462 ozs. 18 dwts. 20 grs., valued at £13,197 3s. 7d. :—

	ozs.	dwt.	gr.	£	s.	d.
Coolgardie ...	14,680	0	13	55,784	2	1
Murchison ...	6,492	9	13	24,671	8	3
Yilgarn	1,131	0	0	4,297	16	0
Pilbarra	1,204	0	0	4,575	4	0
Kimberley ...	147	17	16	561	19	1
Ashburton ...	13	0	0	49	8	0
Total ...	23,668	7	18	89,939	17	5

The total value of the export of gold from the colony through the Customs to the 30th June, 1895, £2,139,889, has been obtained from the following goldfields :—

Kimberley	£82,656
Pilbarra	344,614
Yilgarn	600,737
Ashburton	6,729
Murchison	487,396
Dundas	1,472
Coolgardie	616,285
Total	£2,139,889

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For the past twelve months alone the colony has exported gold to the value of £910,456. What the possibilities or probabilities are, in regard to the goldfields, no one can at the present moment rightly estimate. During the past four and a half years it has increased its export of gold from £86,664 in 1890 to £2,139,889 in 1895.

The following extracts from a report by the Assistant Government Geologist (Mr. S. Göczel) on the gold industry of the colony, dated April 1st, 1895, and appended to the last issued official publication of the Mines Department, will be read with interest :—

" The interior auriferous region of Western Australia is of such " large extent, and the rich gold deposits already discovered within " it are so numerous—and still daily increasing—that the further " prosperous development of the gold-mining industry may be con- " sidered as assured, and beyond the dangers to which in a smaller " goldfield, the rapacity of promoters and schemers might expose it. " The enormous extent of the auriferous region, and the large " number of gold deposits within, will have the effect that no " company or syndicate (however dazzling the prospects of their " mining objects may present themselves at one or the other time) " will be able to monopolise the attention of the investing public ; " and many of those who have entered West Australian gold-mining " enterprise with the intention of becoming so-called " first robbers" " will soon find out that it will pay better to devote more attention " and energy to the mines than to the rigging of the scrip market. " The auriferous deposits of the interior gold region possess the " natural vitality which is capable of victoriously carrying the gold- " mining industry through the worst conditions and circumstances, " to a successful and prosperous issue ; and the time is not far " distant when those deposits will offer a greater choice to the gold- " mining investor than has ever been offered before."

After detailing with great clearness and force the steps which he considers should be taken in the direction of co-operation, under Governmental auspices and control, for the improvement of the means of producing and treating the gold ore, Mr. Göczel concludes his able paper as follows :—" Under such conditions, the gold- " mining industry within the interior auriferous region would be " capable of assuming gigantic proportions ; the initiation of mining

" enterprises could be effected without having recourse to those
" enormous over-capitalisations, without which it seems now hardly
" possible to procure the comparatively small amount of working
" capital required ; a large portion of the goldfields population, now
" held back by distrust, would be enabled and induced to enter into
" actual mining enterprise, with capital, physical force, and experi-
" ence combined ; and a very desirable, productive, and settled class
" of citizens would evolve out of the present roaming population,
" the individuals of which are either homeless, or do not find suffi-
" cient inducement to transfer their homes to the places on which
" they find it profitable to employ temporarily their personal activity.
" Although this is not the place to dwell upon the subject from a
" point of political economy, it is hardly possible not to observe the
" enormous influence which the introduction of a proper system, and
" economy into the goldmining industry, could exert on the future
" greatness of this colony. No doubt the nature and richness of
" the gold deposits are sufficiently inducive to ensure the establish-
" ment of the gold-mining industry on a large scale. Outside
" capital will make use of the chances which are offered for its
" profitable employment ; but, for the risk which this capital takes,
" it demands exceedingly high remunerations within an absolutely un-
" reasonable space of time. In the endeavour to satisfy those
" usurious demands, all the energy available for the conduct of
" mining enterprises becomes absorbed in efforts towards the attain-
" ment of momentary results. Under such circumstances, no pro-
" vision can be made for preparatory work, as commended by ex-
" perience. Work preparing, and setting in view the production
" for years ahead, and imparting to mines and mining enterprise
" in general the necessary security, cannot be thought of ; and an
" industry which actually produces and supplies a requirement of
" our civilization, and on which in the meantime the livelihood of
" thousands of persons becomes dependent, is left entirely to the
" mercy of accident. The enormous extent of the interior auriferous
" region, the large number of gold deposits within it, the nature of
" the latter, and also the circumstances connected with it, will here
" most likely force gold-mining enterprises to a solid and business-
" like basis."

THE SOUTH-WESTERN RAILWAY.

While the eastern line to Southern Cross, with the extension to Coolgardie, serves the goldfields, the South-Western Railway, running from Perth to Bunbury on the coastal side of the Darling Range, with branches to Donnybrook and Busselton, taps a country rich in productive capabilities of a renewable and consequently more permanent character.

A trip from Perth to Bunbury by the weekly slow "mixed" train that carries the stores for the settlers along the South-Western line and drops them by the wayside, is something of a liberal education in light-hearted leisure, and to loll lazily in the corner of a comfortable railway carriage just exactly suits the environment. In perfect contrast are all the circumstances to those of a journey over the Eastern Railway. Something of the eager energy which marks the prosecution of the gold-getting industry characterises the circumstances of the train's progress on the latter line. But a passage by railway over the distance of 115 miles of single line from the capital to Bunbury is an experience free from exciting influences. The route is easy, the scenery bears a placid aspect, the pace is leisurely, and the conversation of one's fellow-passengers has an appropriately slow, bucolic flavour. At present, besides the weekly slow train already mentioned, the needs of the traffic on the South-Western trunk line are met by one train a day each way, Pinjarrah, 54 miles from Perth and 61 from Bunbury, being the crossing station.

Purposely choosing the slow train as affording the best opportunity for seeing the country along the line and studying its characteristics, the travellerwill find that the journey from Perth to Bunbury occupies the best part of a day. The line runs parallel with the Darling Range, and between the hills and the sea, at no great distance from either. A timber bridge carries the rails over the Swan river, just after leaving Perth, and immediately the line, taking a southward direction, is in cultivable country. After the winter rains, glimpses are to be obtained of park-like land that with vivid green grass underfoot and full-foliaged trees overhead reminds one of pastoral England. There is no complaint of want of rain in all the districts served by this railway. Indeed, after the usual heavy downfalls of July and August, there appears to be too much water

lying on the surface of the soil, and draining and ditching become necessary on the farms on the low-lying flats.

While the train is stationary for a few minutes at Burswood, three miles from the capital, a fine view may be obtained of the broad expanse of Perth Water glistening in the morning sunlight, with the city on the northern shore and backed by the wooded steep of Mount Eliza. A wet and chilly dawn is giving place to a gradually brightening forenoon. The sun gains strength, dispelling the grey mantle of cloud which has wrapped the summits of the hills, and nature smiles through the tears that are still in her eyes. It would not be very easy to better that piece of scenery, and he that hath eyes to see will appreciate the chance of enjoying the spectacle. The small but neat wayside stations along this line, all of the same design, with their white-painted fronts and their scrupulously clean appearance, have quite a refreshing effect upon the traveller ; and as he stands upon the platform waiting for the train to proceed, he will be conscious of a soothing stillness in the air, broken now and then by the hoarse cry of the pervasive and ubiquitous crow—who appears to have important business on hand this morning, and intends all the world to know it—or the more musical call of the magpie. An indescribable air of expectancy prevails, as if the woods were waiting for the coming of the wind from the sea, and the song heralding his approach could be heard afar off. You may fancy then that you can hear

" The horns of Elfland faintly blowing."

Eight miles out from Perth, Cannington is reached—another little roadside station, but possessing the added importance attaching to the possession of a goods shed. Through a clearing to the left, as the train moves on, the Darling Ranges come in sight, looking more lofty far than they really are, by reason of the flatness of the intervening stretch of country, the level plain reaching also on the other side to the sea. Keep your eye for a few minutes on the hills, and you will discern beauty in the effects of sunlight and shade on the ravined slopes. On the right-hand side a well found and furnished farm is passed, also a church and the other buildings of a country hamlet. Hereabouts a good deal of clearing and cultivation has been performed ; and

from the number of cows grazing in the paddocks, it is evident that the dairying industry is prosecuted by the settlers in this district.

For dairying and poultry-raising, as well as for every kind of "mixed" farming and "intense" cultivation the country along the South-Western line is eminently adapted ; while the hill slopes are most suitable for viticulture and fruit-growing. As we journey on through the "bush" which for the most part lines the track, except where the land has been cleared for cultivation, there is nothing of savagery or wildness in the aspect of the country. A placidity born of contentment and comfort, if not of high prosperity, characterises the settlements in these parts. The residential buildings to be seen from the line are for the most part substantially constructed, and although advancing no pretentions to architechural beauty, have the appearance of comfortable homes. Fat cocks and hens strut cheerfully about the yards and small gardens, and the ducks are evidently having a particularly merry time after the recent heavy weather. A patch covered with that singular plant, or rather tree, known as the "blackboy" comes into view, and the whole way along the line this shaggy-headed stunted vegetatlon is well in evidence.

Perhaps tiny elves and fairies hold high revel in these grassy glades—folk of dreamland who, driven out of nook and dell, emigrated from Chaucer's, Spenser's, Shakespeare's England when it became the overcrowded home of "a nation of shopkeepers." Nothing here of the weird gloom of the Australian "bush" which Marcus Clarke has so graphically described. Fancy may amble on her gentlest palfrey without fear.

Our train is carrying, in the trucks ahead, flour and other stores, as well as farming implements, for the settlers along the line ; and we stop wherever a bale or package or case has to be put off. Out from among the trees come the expectant inhabitants ; and the passage of this weekly providence, upon which they depend for the repletion of their exhausted stocks of necessaries, is evidently an event of much consequence. The train carries its own shunting and porterage staff, as the majority of the small stations along this line are unprovided with attendants ; and our chief guard is evidently well-known and popular with all the settlers. He has a cheery word and a ready helping hand for everyone.

At Jarrahdale Junction, 29 miles south of Perth, the South-

Western Railway crosses the private line of the Jarrahdale Timber Co., which runs inland from the sea at Rockingham up into the Darling Range. The local demand for the famous timber which gives its name to the locality, militates against the export trade. With the rapid development of the colony, the requirements of the building trade have grown so enormously that timber-getters are hard pushed to keep pace with them. There are other difficulties of a commercial character in the way of an export trade in jarrah, karri, and other hard woods growing in abundance in the South-Western districts. But so highly are they appreciated wherever they have been used, that it is safe to predict a great future for the forest resources of the colony. Timber must always form one of the principal natural assets of West Australia.

Pinjarrah, the half-way halting-place, is reached about noon ; and here the trains stop to give the passengers opportunities for refreshment. At the Premier Hotel, close to the station, a substantial meal can be obtained at a moderate price ; and one is surprised to find such superior accommodation in a "bush" township. Pinjarrah, however, is a favourite resort with city folk in the sweltering summer months, for the breeze from the sea, 14 miles away to the West, never fails to temper the savage heat of the sun in the dog-days. The country round about bears a pleasant aspect, and in excursions to the hills on one side or the sea on the other will be found refuge from *ennui*. At Pinjarrah the Perth-Bunbury road crosses the river Murray, no contemptible stream when swollen by the rains, by a substantial structure—of jarrah timber, of course.

This is a country where "mixed" farming is found to be successful ; and the raising of sheep, cattle and pigs is combined with the growing of cereals and feed for stock, very much after the manner of English husbandry. Fodder crops are the principal concern with the farmers in all parts of the colony just now that the demand for the teams on the goldfields is so heavy. Good wire fences surround well-tilled land, and substantial brick dwellings are the rule. The soil is mostly clay and loam—not so rich, perhaps, as some of that in the best areas of the Eastern districts, but having the immense advantage of a regular and reliable rainfall. Taking into account the age of the colony, this is an old-settled district, inhabited by a people who seem to enjoy

a fair measure of solid prosperity, and to be contented therewith. This, too, is the best country possible, you are told, for the growth of citrous fruit. About its capabilities in that direction experts grow enthusiastic, confidently asserting that a grand future awaits the orchard industry. The outgo to the capital from this district consists principally of fruit, and fodder for cattle ; and in time the local products are bound to exceed the imported articles in quantity as they now excel them in quality. Imported grasses have not been found to grow well in these parts, says one of the oldest residents who farms a large tract of land ; but, he adds, the natural couch grass makes a good rough stock feed which endures through the summer when areas sown with other seed are bare. If the soil be turned over, its yielding capacity can be increased four-fold ; but it is not found necessary to plough deep. A furrow of a few inches in depth suffices.

Further south of Pinjarrah, there is a good grazing country which supplies butter to the Perth market ; but the bulk of the other produce from the land there goes to Bunbury for shipment.

At Drake's Brook, 70 miles from Perth, the railway runs close to the hill range, and at a place bearing the oddly-sounding name of Wagerup, enterprising firms have erected large saw-mills close to the line. Here lie great logs of jarrah brought down from the range close by to be cut into useful sizes for piles or baulks, or sleepers, or any other purpose for which hard wood is requisite. The train stops frequently to pick up a plough or drop a bag of flour or case of stores ; but there is very little passenger traffic. The passengers do not fail to throw out newspapers to the dwellers in the " bush " gathered to see the train pass, an attention evidently highly appreciated ; and our progress is punctuated by the pleasant interchange of courtesies.

On account of the frequent stoppages of the " weekly " train, a long time is occupied in covering the 80 miles to Cookerup, and, this journey being taken in the short days, the lamps are put in the carriages at this station. At Harvey, 6 miles further on, the line runs close to the range again ; but the hills here almost sink to the level of the plain. The line passes stretches of tilled and fenced land, while outside the pale of cultivation the pervasive " blackboy " persistently asserts itself, the appearance of this singular plant being

no bad criterion of the quality of the soil. The sun sets ; and not without attraction for the eye is the heaping up of the night blankets of the sky in the West, while on the eastern side of the line the hills may be watched as they slowly fade into an indistinguishable and gloomy mass, and the trees merge into dark obscurity, the energetic cricket in the neighbouring scrub lustily chanting vespers the while.

After leaving Waterloo, 107 miles from Perth, the passenger is not surprised to find that the next station is named Picton, thus perpetuating in this far-off land memories of that famous fight which ended forever the career of the Great Disturber of the Peace of Europe.

From Picton Junction the line sweeps into Bunbury on a curve skirting the sea-shore ; and the tired passenger is not sorry to find himself lodged in one of the comfortable hotels to be found in this town. Bunbury is no place of mushroom growth, but is one of the oldest settlements in the colony, its existence dating back to some 40 years ago. Surrounded by excellent agricultural and fruit-growing country, it is the centre of a solidly prosperous district ; and some of the oldest and best-known families in the colony hail from the neighbourhood. It has the honour of being represented in the Legislative Assembly by the Premier (Sir John Forrest), and the home of the Director of Public Works (Hon. H. W. Venn) is in the district. But although Bunbury blossomed out from a town trust into a full-blown municipality not fewer than 30 years ago, it does not yet possess a town hall. It is the principal port of the South-Western District, and steamers from the Eastern colonies call in here on their passage up or down the coast. The principal export is timber. The imports include food supplies and all classes of manufactured goods from Sydney, Melbourne, Adelaide and other parts. At Greenbushes, some 50 miles further south, there are large deposits of tin ; but the prevailing low price of that metal does not allow of the tin mines being profitably worked.

It is to the coal deposits discovered at Collie, some 30 miles distant from the railway in a bee line, that the good folk of Bunbury are looking for added prosperity for the town and district ; and if further operations in that direction should justify the high expectations based on the present outlook, it is not too much to say

that the whole colony will benefit largely. The discovery of true and workable coal measures in West Australia will have almost, if not quite, as much influence in advancing her prosperity as the discovery of gold has had. Specimens of Collie coal sent to London have been pronounced by experts of the highest standing to be of good class, and the material has been thoroughly tested on the railway as fuel for the locomotives, with satisfactory results. The surface indications over a large neighbouring area are most promising, and it is considered certain that the deposits are extensive. Should the locality develop into a workable and remunerative coalfield, a branch line will have to be carried out to it from a point on the trunk line near Bunbury. The Government is actually prosecuting the experimental work ; and the few following facts stated in a return recently made to the Legislative Council, will show how operations are proceeding on the Collie coalfield :—The amount expended on the field was £7,898 1s. 11d. The quantity of coal raised was 1,700 tons, at a cost of 8s. 6d. per ton. The whole of the quantity raised had been used by the Government, with the exception of that now at the Collie. The coal cost 39s. per ton at the Collie railway station. Eighteen bores had been put down with a pumping drill, and four bores with a diamond drill. Twelve of the former are within one mile and six are from one mile to five miles distant from the workings. Three of the four bores drilled with the diamond are from $2\frac{3}{4}$ to 5 miles distant from, and one is within half a mile of, the main workings. The eighteen bores ranged from a few feet to 250ft., the total boring coming to about 1,880ft. Four bores ranged from 270ft. to 960ft., the total boring at present being about 2,000ft., with about 160ft. still to bore. The majority of the bores passed through coal, but at very varying depths and frequent intervals. The quality in these seams is generally similar to that in the present bores, but those to the west produce a better quality. No definite arrangement has been made as to working the mine, but it is hoped that the construction of the railway will induce parties to take up and work the coal mines under the mineral regulations. The quantity of coal imported by the Government for railway purposes during the 12 months ended 30th June last was 13,959 tons, the contract price being 20s. per ton.

The best butter made in the colony is manufactured in the Bunbury district, whence it is sent to the Perth market; for, in the country round about, the dairying industry is carried on under most favorable conditions, the breed of cattle giving the best results, being Alderneys and Jerseys. The population of the district is probably nearer 6,000 than 5,000. In the town the various religious sects are represented by churches and schools; and local opinion finds expression in two newspapers, one appearing twice a week, the other thrice.

The South-Western line is continued some 26 miles in a southerly direction as far as Donnybrook (*alias* Minninup), the centre of a farming district, with the ultimate view of carrying it on to open up the agricultural land on the upper reaches of the Blackwood River: and such extension would pass through splendid timber country. The best jarrah in the colony is found on the Collie River; and, hereabouts, too, flourishes the karri, which is a harder and stronger wood than jarrah, but lacks the very valuable water-resisting quality of the latter. The karri is a magnificent tree, some specimens growing to a height of 300 feet, with 150 feet to the first limb, and a massive trunk as straight and smooth as a gun-barrel.

Busselton, a quiet little place utterly belieing its name, and situated at the mouth of the Vasse River, is also connected by rail with Bunbury, being reached by a line running 26 miles from Boyanup junction, on the Donnybrook branch, Boyanup being 16 miles from Bunbury. From Busselton there is a small export of timber coming from saw-mills in the vicinity.

Fish for the table, of several varities, can be obtained from the part of the coast reached by the South-Western railway—schnapper, jewfish, flatheads, taylor, mullet, kingfish, herring (so-called), garfish, rock-cod, whiting, salmon (so-called), and other kinds. Throughout this part of the country (according to the old settlers) the kangaroo used to abound; but the typical Australian animal had been sacrificed for his skin, and few are to be found now-a-days in the district. Wallabies, however, are still to be met with, and, when taken young, are not to be despised as a dish for dinner. Rather late in the day the waterfowl, which have their habitation on the lagoons and swamps in the South-Western district, are being protected by law, the local sportsmen (?) having done their best to

kill the birds off. Some fine shooting, therefore, may yet be obtained in the district. What with the near attractions of hill and sea, of timbered land and open country, the centre of an area equally adaptable for dairying, fruit-growing, or general farming, and, above all, having a regular rainfall, Bunbury enjoys natural advantages that should ensure to her a prosperous future for all time.

The Lands Department of the colony publishes the following particulars regarding the specially-selected agricultural areas adjacent to the route of the South-Western Railway :—"In dealing with the "areas along or adjacent to the South-Western Railway, extending "from Perth to Bunbury, and its extension to Donnybrook, we "have a totally different class of land to that of the areas along "the Great Southern Railway. Whilst the latter areas are emin- "ently and especially suitable for cereals, with here and there "patches adapted for fruit-growing, the former includes land that "is best adapted for fruit and vegetable growing, and for dairy- "farming. In some places the country is heavily timbered, costing "a considerable sum to clear ; but against this must be placed the "fact that much smaller areas can be taken up, the land being "capable of 'intense cultivation.' It is also for the most part well "watered, whilst the rainfall is constant and considerable. The "highest hopes are, indeed, entertained in regard to these areas, "and much thriving settlement is looked for in the South-Western "districts. There are eight areas in the vicinity of the South- "Western Railway, comprising 271,000 acres."

The various tracts thus set apart are then described in detail as follows :—

TWEED AGRICULTURAL AREA.

"Beginning South and working northward to Perth, we first take the Tweed Agricultural Area. This was thrown open for selection in March, 1893, and contains 29,000 acres, of which 16,882 are surveyed into 92 blocks. . . . This area is situated near Bridgetown, which is ten miles distant along a good road, and it is 35 miles from Donnybrook, the present terminus of the South-Western Railway. It will be interesting to learn, in regard to this area, which contains some of the finest agricultural and fruit-growing land in the colony, that some of it was specially selected

by the late Mr. Anthony Hordern, originator of the Great Southern Railway scheme, as a site for his projected agricultural college and experimental farms. The land, having been abandoned by his executors, was surveyed and subdivided by the Government, and thrown open for selection. A hundred-acre block in this area would, as a rule, be amply sufficient, and this would cost about £6 per acre to clear. There is splendid alluvial soil, and a heavy rainfall, whilst the river Blackwood runs through the area. This area is distant from Perth about 175 miles.

PRESTON AGRICULTURAL AREA.

"This area, situated about 25 miles from Bunbury, contains 50,000 acres. It includes large tracts of good alluvial soil, the clearing in places being heavy. The average cost of clearing is about £6 per acre. The area adjoins the Donnybrook railway terminus, which must lead to the speedy development of land specially adapted for potatoes and other root crops, fruit and dairying, also pig-breeding. The area is plentifully watered with creeks and brooks, and the rainfall is large.

BOYANUP AGRICULTURAL AREA.

"The Boyanup Agricultural Area, about twelve miles from Bunbury, was thrown open for selection in June, 1892. It contains 40,000 acres, of which 13,973 are surveyed into 102 blocks. It is served by the line between Bunbury and Donnybrook, which connects with the South-Western railway, and contains much land well adapted for cereal, fruit and vegetable growing and dairying. In this area 54 blocks have been set apart as Free Homestead Farms.

COLLIE AGRICULTURAL AREA.

"This area, situated about eight miles from Bunbury, is comparatively small, but none the less valuable, and most of the land within it is taken up. It comprises 6,000 acres. It was opened for selection in February, 1892. It is served by both the South-Western Railway and the extension of the line to Busselton and Donnybrook. The area, which is plentifully watered and exceedingly fertile in places, is about 25 miles from the Collie River coalfield.

HARVEY AGRICULTURAL AREA.

"At present only two sections of this large and important area are thrown open—the southern portion is called the Harvey, and

the northern is called Coolup Area. The Harvey Area was declared open for selection in November, 1892—this comprises 50,000 acres. Of this amount 19,803 acres have been surveyed. This portion of the area is situated about 40 miles from Bunbury, and 76 miles from Perth. The South-Western Railway runs through this area for its whole length. The cost of clearing and preparing the soil is somewhat heavy, but, as a rule, a man might well be content with a holding of 100 acres ; and in some places even 10 acres would be sufficient, with careful culture, to obtain an excellent living from. The area is situated between Bunbury and Pinjarrah, and will yet be the home of a large and thriving rural community. This area will be greatly improved by a system of drainage, which has been demonstrated by surveys to be perfectly feasible. In this area 15 blocks have been set apart as Free Homestead Farms.

COOLUP AGRICULTURAL AREA.

"This is the northern portion of what was at first gazetted as the Harvey Area. In contains 50,000 acres. 217 lots have been surveyed, including an area of 30,005 acres. It was declared open for selection in September, 1893. This area is situated alongside the South-Western Railway, its northern portion being within two miles of the Pinjarrah station, which is 54 miles from Perth, and 62 miles from Bunbury. The land in this area is suitable for the growth of fruit, vegetables and cereals. The clearing here would cost about £6 per acre. There is a heavy and regular rainfall in this locality. In this area 76 blocks have been set apart as Free Homestead Farms.

SERPENTINE ARGICULTURAL AREA.

"The only agricultural area on the South-Western Railway, between Pinjarrah and Perth, is the Serpentine. This, which comprises 10,000 acres, has not yet been thrown open, but includes about 2,000 acres of fertile cereal and fruit-growing land, near the Serpentine River, by which, under a system of gravitation, the land might be easily irrigated. Without irrigation 100 acres would be sufficient for settlement ; with it 50 acres or less would be ample. It possesses the advantage, moreover, of being situated along a line of railway, a distance of only 30 miles from the Perth market.

THE JANDAKOT AREA.

"The Jandakot Agricultural Area, which is situated about

twelve miles to the south of Perth, and ten miles from Fremantle, was opened for selection in 1890, the first portion being thrown open in January of that year. It comprises 36,000 acres of land, much of which is of an admirable description, though in many places of a swampy nature during the winter months. When this land is drained, however, it is eminently suitable for the growth of vegetables, especially potatoes, and magnificent samples of these have been sent in and exhibited at the Lands Office. The area is also in many places well suited for dairying, whilst sorghum, maize, and root crops, such as mangolds and lucerne, have been here cultivated with much success. The land is, however, somewhat expensive to clear, and some of it would cost quite £10 an acre in this respect, but on the other hand the productiveness of the soil, and the consequently small area required compared with what is required, say, at Meckering, would compensate this fact, whilst there is absolutely no water difficulty, water being, if anything, too abundant. There is much unoccupied land in this area described on the map as 'rich black soil,' 'good black soil,' 'good sandy soil,' or 'rich swampy soil.' Portions of this area have a limestone formation, which renders them of especial value. There is a site for a sewage farm upon the western side of this area, and a reserve for a town-site in its south-eastern corner. It is approached from Fremantle by the Forrest road, which traverses the area, striking the Perth road at the 14-mile post. This road has recently been cleared about half its width from end to end. On the eastern side of the area, and about three miles from the nearest portion, runs the South-Western Railway, from Perth to Bunbury. . . . In this area 35 blocks have been set apart as Free Homestead Farms."

THE NORTHERN RAILWAY.

The Northern division of the Government Railway system has its centre at Geraldton, which, as shown on the map included with this book, is a port on the shores of Champion Bay. The first railway of the colony started from Geraldton, and was carried northwards to Northampton, a distance of 34 miles. Geraldton is also connected with Perth and the general railway system southwards by the Midland Railway Co.'s line, running 277 miles from Midland Junction to Walkaway Junction, whence a Government line of 20

miles length completes the connection with the northern port. At a point eight miles from Geraldton, on this latter short length of the Northern system, is the junction for the railway which has been extended inland to Mullewa in the direction of the Murchison goldfield, and which is to be pushed on to Cue, along the route shown on the map, as rapidly as possible.

With the completion of the line to Cue, Geraldton is bound to become one of the most important centres of the colony, being the sea-gate for the whole of the extensive auriferous areas in the Murchison district. Its present population numbers some 2000 souls. It has a secure, well-lighted and easily-accessible harbour, and the main jetty is being considerably extended in order that vessels drawing 18ft. 6in. of water can come alongside at low tide. The railway runs to the sea-end of the jetty.

The district, which, as the age of the colony goes, has been occupied for many years, contains a population locally estimated at 5000 persons, and returns one member to the Legislative Assembly. The climate of Geraldton is exceptionally salubrious. It is rather cooler than that of Perth, and it derives healthiness from the sea-breezes.

The town possesses a well-built railway station and sound and useful commercial buildings, conspicuous among the latter being the offices of Messrs. Wainwright & Co., general merchants. Three banks are located in Geraldton, one of which cost £8,000 to build, and hotels and stores abound. The residents are of an energetic and enterprising nature, and evidently do not intend to let slip the opportunities for fortune-making afforded them by the opening-up of the Murchison goldfield, and their coming connection therewith by rail.

In the district north of Geraldton and extending to Northampton, certain lands have been set apart with a view to their occupation as agricultural areas; and at Nonga, adjoining the latter-named township, an area of over 11,000 acres was thrown open for selection in September, 1893, several small blocks being reserved for homestead farms. On these areas the soil is suitable for the growth of cereals, being a stiff clayish loam; but a drawback to farming operations exists in the slightness of the rainfall, the annual average in these parts being only about 18 inches.

On the Greenough Flats, however, a few miles south of Geraldton, the country has been occupied and cultivated for 30 years past, the soil and general conditions being especially suitable to the cultivation of cereals, horse-feed, and farm products generally. The Greenough Farmers' Club is an active and progressive organization, under whose auspices an annual agricultural show is held.

With a light rainfall, the country about Northampton is generally better adapted for pastoral than agricultural purposes. There are "runs" in these parts having 20,000 sheep each, from which comes some of the best wool grown in West Australia, notably from White Peak and The Bowes. Cattle, horses and pigs are also raised in the district; and the demand from the goldfield settlements, as well as from the rapidly-growing port, for dairy produce, eggs and poultry, as well as horse-feed, points the road to fortune for the settler who can skilfully combine the cultivation of these several productions.

From Mullewa, in the absence of a railway line further inland, the teams now start for Cue with the stores and general requisites for the settlements on the Murchison goldfield, the distance by road being 215 miles. There is a good natural track all the way, along which 8 horses can readily draw a load of four tons. The track keeps good during nearly all periods of the year, the rainfall being hardly ever heavy enough to render the going difficult.

Immense deposits of lead ore were found several years ago in the the vicinity of Northampton, and these discoveries led to settlement in this township and the construction of the railway from Geraldton. Owing, however, to the low price to which this mineral fell shortly after these finds were made, and which has ruled since, it has not been possible to work the mines at a profit.

MULLEWA-CUE RAILWAY.

With reference to this proposed line to connect Cue and other centres of the Murchison Goldfields with the port of Geraldton, being a continuation of the 65 miles of rail already constructed from Geraldton to Mullewa, the following information, obtained from official sources, was published in the *West Australian* newspaper of Sept. 18th, 1895 :—"The line is remarkable principally for the fact "that there is nothing remarkable in it. In a length of 196 miles

"there is an altitude attained of only 560ft. Page after page of "the plans show sections marked 'level' or '1 in 1,000.' The "ruling grade is 1 in 60 ; but it is not by any means of frequent "occurrence. Starting from Mullewa, which is 904ft. above sea- "level, there is a run of eight miles in which some slight works "have to be carried out—the reduction of some grades, the cutting "of a few banks, and the raising of small depressions. There are "also a few curves in this portion of the line, but not of a narrow "radius. The banks do not require more than four feet of work "upon them. After the first eight miles have been passed, there "follows a long stretch of over 170 miles of country, either perfect- "ly or practically level. The whole of the work is on the surface. "The timber is stunted, being almost a scrub, and not very thick. "There will probably be about 500 small culverts and some 47 "bridges, the largest no greater than seven spans, each of 15ft. "The full length of the bridging on the line is some 1,500ft. The "terminus of the line at Cue is situated in the centre of the land "between Criddle and Laurie-streets, parallel to which the line will "run. There are to be twelve stations—at Pinder, Warorago, "Wolla Wolla, Yalgoo, Mannaowthara, Murrum, Yoweragabbie, "Mount Magnet, Ned's Well, Lake Austin, Day Dawn and Cue. "The four large stations will be at Cue, Day Dawn, Yalgoo and "Mount Magnet. The Yalgoo platform will extend 400ft. by "25ft. width. The goods shed will be 90ft. long, the carriage shed "100ft., and the engine shed 60ft. long. There are to be cattle "and sheep yards, carriage and horse-loading platforms, and the "usual accessories, with ample provision for future extension. The "buildings will include a large public hall, a dining-room and "refreshment-bar, a kitchen, pantry, store-room, and a couple of "residential rooms for the holders of the refreshment-room license. "There will be a luggage-room with a separate room for entrance "for luggage, and the usual conveniences. The Cue and Day Dawn "stations, where there will be no refreshment-room, will be smaller "though similar. All the buildings will be built of stone, and "there are to be tanks in sufficient number to hold a water supply."

Tenders for the construction of the permanent way, the rails and fastenings being provided by the Government, will be received at the Public Works Office up to noon on December 17th of this year.

PRIVATE LINES.

INTRODUCTION.

In the other Australian colonies it may be said that the principle of State-ownership has become a fixed basis of railway policy, it being held that a railway which will pay under private control should pay under Governmental management. And a very strong objection has always been manifested in the Sister States to the construction of lines by private companies or individuals on the land-grant system, the fiat having gone forth against any further alienation of the public estate. In West Australia alone has the building, equipment, and working of important lines by private proprietaries been permitted to any considerable extent, the companies embarking upon the enterprise of railway construction, receiving, as bonus, large grants of land along the routes of the lines.

When the Great Southern and the Midland Railways (the two trunk lines in the colony which are not owned and worked by the Government) were projected, West Australia was not in a position to incur the cost of their construction. At the same time, it was considered eminently desirable by those who controlled the destinies of the colony, that access by rail to the fertile parts of the South-Western Division, which these lines were designed to serve—one in one direction, and one in the other—should be provided. So the enterprising promoters of these two important railways were not only allowed free way in the prosecution of their undertakings, but were encouraged therein by liberal concessions from the Government.

Under, however, the present changed (and still changing) conditions of the colony, and in accordance with its rapid rise to a position of national individuality and importance, there can be small doubt but that the question whether the Government ought not to take over and work these two privately-owned railways—forming, as they do, integral parts of the public transport system of the colony—may in the near future be expected to present itself here, as in other countries, for decision. As an affair of national policy, closely

connected with the settlement of the land, and consequently with the future prosperity of the colony, requiring to be settled once for all on a definite basis, this question, when it crops up, should receive close and earnest attention.

That railways, if their operations be carefully supervised by a Government Department, can be owned and worked by private companies to the advantage and satisfaction of the general public, we have the example of the English proprietary companies to show. These immense corporations carry on their business under the vigilant eye of the Board of Trade. Private ownership does not, therefore, seem to be in itself necessarily antagonistic to the public weal, provided it is subject to requisite State supervision and control.

THE MIDLAND RAILWAY.

By reference to the map inserted at the beginning of this book, it will be seen that this line, owned and worked by the Midland Railway Company of Western Australia, Limited, a London corporation, runs in a northerly direction from Midland Junction, on the Eastern Railway near Guildford, to a place called Mingenew, a distance of 217 miles, and from Mingenew due west for about 36 miles to the small seaport town of Dongarra, thence, turning north again and proceeding close to the coastline for another 24 miles, to Walkaway, at which latter point it meets the Government line from Geraldton. On November 24th, 1894, the Midland line was completed throughout the whole of its length of 277 miles, and was opened for traffic.

The construction was undertaken by the well-known railway contractor, Mr. E. V. H. Keane, of Perth, West Australia; and it deserves mention that when the experts forming the World's Transportation Committee, appointed by an American syndicate to report exhaustively on the systems of transport in vogue in all countries, in their recent visit to this colony, travelled over the Midland Railway, they pronounced that it was "well and truly laid." The line consists of a single pair of rails throughout; the guage is the same as that of the Government railways (3ft. 6ins.) and the weight of the rails is 46¼ lbs. to the linear yard. The total cost of construction was, in round figures, a million, or at the rate of about £3,600 per mile.

After the contract was let by the proprietary Company, the work of construction was carried on with vigour, the lands comprised in the concession being meanwhile carefully selected and surveyed, until certain financial difficulties, arising out of the monetary crisis in London, compelled the Company to suspend operations for a time. Eventually the Government of the colony came to the rescue by guaranteeing an issue of £500,000 by the Company on debentures against a hypothecation of 2,400,000 acres out of the total of 3,316,464 acres to which the Company was entitled on completion of the railway by the terms of the concession granted for its construction and equipment. These stipulations were that the Government should grant the Concessionaire land at the rate of 12,000 acres per mile to be selected along the route of the railway. As the land comprised in the concession lies within a belt of country extending 40 miles on each side of the railway and along its whole length, the company has had an area of about 15 millions of acres from which to select the grants to which it became entitled on the completion of the line. Such are the terms under which this very important section of the railway system of the colony has been built.

The equipment of the Midland Railway has entailed no very heavy expense, there being as yet few stations along the line and no large supply of locomotives and rolling stock yet being necessary, the traffic needs at time of writing being met by a train running each way on four days a week. But there can be little question that now this line is constructed and that settlement on a considerable scale on the fertile areas along its course may consequently be expected, the volume of traffic will rapidly increase as time goes on ; and it is by no means improbable that within a short time—say a year or two—the number of stations and sidings will have to be augmented, more trains will have to be run, and other arrangements made to meet the requirements of a large transport business. Being the main connecting link between two such important centres of the colony as the capital and the sea-gate for the Murchison goldfields, as well as for large tracts of pastoral and agricultural country, passing also through some of the richest land in the colony, the Midland Railway of West Australia—whether it remains a private concern or is taken over by the Government—is certain to have a prosperous future.

The Company intend to construct a branch line from Mingenew to connect with the Cue railway at Mullewa. A glance at the map will show that this extension is obvious, and the direct connection thus formed with the line to the Murchison goldfields cannot but greatly augment the carrying trade of the Midland Railway.

The Company is controlled from London, Mr. W. F. Sayer, of Perth, acting as its attorney in West Australia. Its headquarters in the colony are located in St. George's Terrace, where are situated also the offices of the General Manager, Mr. E. V. H. Keane. Mr. George Roberts fills the post of Traffic Manager, and Mr. Chas. Cooper that of Locomotive Superintendent.

The fertile agricultural country of the Eastern districts of the South-Western Division of the colony stretches from Northam and Newcastle away and across to the route of the Midland Railway—which, indeed, passes through some of the most fertile land in the populated part of the colony and to its furthermost limits is in touch with good agricultural country. Opening up, as it does, so large a cultivable domain from Guildford to the Irwin, the Midland line is quite one of the most important enterprises in the colony. Even where it crosses the so-called "sand plains," there are no such appearances of desolation as are usually associated with that descriptive term ; at any rate no need exists for such an outburst of grief as came from the Walrus and his friend the lachrymose Carpenter when, as recited by the Gryphon, they took their famous walk on the beach in Lookinglass Land, and

> "Wept like anything to see
> Such quantities of sand."

About these sand-plains, a high geological authority says that they are a striking feature of Western Australia, and to a material extent regulate the climate. In some parts they are redolent with flowers of every hue, and they are by no means unproductive or useless. These, says he, are not desolate, barren wastes such as those of Central Asia, Egypt, Arabia, Algeria, Arizona, or Chili ; but are covered by rough grasses, herbs, bushes, and flowers. To some extent they resemble the country surrounding Madrid. Nor are they so thoroughly desolate and useless as large tracts of the other Australian colonies. North of Perth, sand plains exist parallel with the Darling Ranges and situated between those hills and the sea, which are broken at intervals, along the course of

brooks and rivulets, by irregular straths and strips of rich soil. Separated from the railway on the coastal side by some 16 miles of sandy country runs a long strip of fertile land, forming the well-known agricultural districts of Yatheroo and Dandaragan, while on the inland side of the line and trending south-east, Long's Sand-plain, 25 miles wide, extends towards the interior.

Taking the least promising land first, it has to be said of Long's plain that several patches of good land are to be found within its borders, that it is covered by heath and curly grass, affording fair summer feed for sheep, and that several good springs have been tapped over its surface, this last being an especially welcome feature. The natural springs along the Midland route—at Mingenew and Yeregullah, at Arrino and the Irwin—are of the greatest value and importance in view of the settlement that is bound to follow the opening-up of this country.

The geological authority referred to above has the following to say about the character of the strata of the areas within the limits of the Midland Company's selection :—" they consist of granite rocks or rocks affiliated thereto. These, indeed, form the backbone of the colony. They are traversed by volcanic zones, in which various basaltic rocks (mostly acidic) have been erupted. To the decomposition of these two varieties of rock, the character of the soil is mainly due, the climate and regular rainfall supplying the conditions necessary for the successful cultivation of the soil. The whole area is comparatively flat and undulating, and has evidently in recent geological times been submerged. The coast is at present steadily rising. To this is, no doubt, due the deposits of corallaceous and calcareous rocks that fringe the coast line, and the embedded yellow and mottled sandstone and clay beds that cap some of the lesser elevations of the other granites, or fill up hollows in these ancient rocks, as in parts of, and to the south of, the Irwin Valley. At Gingin, extensive masses of limestone occur ; and at Bindoon, twelve miles east, the detached ranges are considerably broken by intrusive rocks."

In some parts of this country gold has been found ; but as yet " no organised effort has been made to prospect this district." Mica, in large sheets, is met with, which might be turned to profit-

able account ; and there are traces of copper in the Wongan hills. Another natural deposit in the soil is asbestos, found about Walebing, which may also be worked to advantage some day. Copper was mined at Woodbingarra, a few miles north of Arrino, twenty years ago ; but the fall in the price of that mineral, and the expense of working and carting it to the coast in those days, left no margin of profit on the operations. Before long, no doubt, all this country will be thoroughly prospected for gold and other payable minerals ; but as long as rich finds of the precious metal are being made in the far east, on the Murchison and Coolgardie fields, so long will the coastal country await its opportunity for thorough development of its mineral resources.

Irregular carboniferous beds have also been discovered on the Irwin river, which runs through Mingenew, with shales showing "cone in cone" structure. Little, however, has been done in the way of thoroughly opening up these deposits. Some lignite has been brought to light, which has been proved to possess a fixed carbon percentage of 45 per cent. This, although not a true coal, could be used for fuel on locomotives in a level country where great steam pressure is not required. It is also not unsuitable for household purposes, although containing a heavy percentage of moisture. The expense of raising this material should not exceed 7s. per ton in waggöns at the mine.

Having dealt with what lies under and forms the surface in the country traversed by the Midland line, it now remains to speak of the productive qualities of the soil from the tiller's point of view. The whole of this great belt of country may be said to be suitable for the growth of cereals ; and wheat is being cultivated at Mullewa even beyond the north-eastern boundary of the Company's concession. The yield is put at from 15 to 25 bushels per acre. Some of the land quite rivals in fertility that along the route of the Eastern railway, and is much of the same character. Consequently, a good deal of it has been taken up as freehold, the selections generally following the course of the streams and brooks. Of the vast area, however, conceded to the Midland Company, and within easy reach of the line, large portions remain unoccupied, awaiting the day—which is bound to come—when the advantages of obtaining productive land along a railway route will come into clearer recognition

as the gold-fever abates, and those who have been unsuccessful on the mining fields will turn their attention to other and safer, if less exciting, pursuits.

When you take gold out of the earth, by so much you permanently impoverish the land. The precious metal removed, the value of the land, in that particular, is gone for ever. But if you till and tend a suitable soil, and sow the right seed therein, your reward will not be merely one harvest, more or less rich, but a succession of abundant yields, continuing so long as you shall treat the land with intelligent and diligent attention.

It is natural that just now when fresh discoveries of rich deposits of what Milton terms the "precious bane" are reported daily from the auriferous areas inland, the whole population of the colony should be more or less seized with the fever to get gold. But that phase is bound to pass away. Of its very nature it must be but ephemeral compared with the existence of a State. The stores of ore, discovered or not yet known, held by this country, may be large, may be unprecedentedly extensive. As, however, Nature in her chemical laboratory is making no provision to counterbalance the rapid depletion of the stock of the magic metal, exhaustion is bound one day to ensue. Then woe betide the colony if her people have neglected to develop the more permament and reliable resources of her soil! Men, now-a-days, are inclined to shirk the question of the future of Western Australia. They get rid of the uneasiness it induces by the selfish and mole-like process of shelving it. "Sufficient unto the day is the evil thereof" is their motto.

Against the inevitable day when the "boom" in connection with mining in this colony shall be numbered amongst the things that have been, and the gold-getting industry shall have dropped down to a normal and dividend-earning level, and the whole *genus* of professional promoters and market-manœuvrers, with their attendant pack of unscrupulous and reckless adventurers and hangers-on, shall have betaken themselves to "fresh woods and pastures new," and that long-suffering and ever-gullible creature the British investor, shall have become tired of waiting for profits from unworked and bogus mines, and the occupation of the self-styled "mining expert," of concocting ungrammatical, unscientific, but highly-coloured reports as baits for the greedy and the "green," shall be gone,

and the truly honest prospector who has borne the burden and heat of the day in making fortunes for others, shall find himself broken in health and spirit as well as empty as to his pockets as the reward for all his toil—against that day, West Australia, if she is not then to relapse into her pre-autonomous condition of somnolent stagnation, must set up other stand-bys in the shape of productive industries. The discovery of gold has given the colony a splendid start on the up-line ; but her mines will not suffice to carry her along for all time. The true statesman, ever far-seeing and foreseeing, looks beyond the burst of present prosperity, and has an eye for the future and its limitless possibilities of chance and change. He welcomes progress—but only if the steps onward be planted on perfectly firm ground. There can be hardly a more precarious condition for any country than to be dependent upon one industry alone, and that so uncertain as mining.

May a long time elapse before the golden treasure of this immense territory is all taken out ! There is every prospect that the store will last for years yet. But it would be foolish in the last degree on the part of those who direct the course of the Colony and would shape its destinies aright for securing a lasting prosperity, to rely solely upon the gold-mining industry. In the life of a country a decade is but as a day in the life of an individual. Ten years hence and the gold-getting industry may have declined. But the development of a colony's agricultural and generally productive resources has an effect which must enlarge and continue to enlarge the scope and prospects of its future. So it behoves the rulers of West Australia at this critical period of her existence to put forth every effort in encouraging all kinds of industry for the development and prosecution of which the circumstances are favourable. Now, when the fame of her goldfields is attracting to this colony the eyes of the world—now is the time to advertise her other productive capabilities. And above all is it desirable and expedient to attract to these shores tillers of the soil from other lands where the prevailing conditions of life are hard—often so hard as to render life not worth the toil and trouble and pain of existence.

After careful consideration of all the circumstances and prospects, it has been laid down that in the majority of the cultivable areas comprised within the Midland Railway's territory, a farm of 300

acres would be sufficiently large for any settler, the head of a family, possessed of moderate means, who intends to cultivate the soil on rational principles and study to turn its varied productive capabilities to good account.

The Midland Railway's concession of land selection, it may also be remarked, extends to the west to the borders of the suburbs of the capital and to the environment of the chief port ; and as these towns are growing rapidly, there is no doubt that great value will, in the near future, attach to these particular areas when they are required for building purposes. The same is the case, though perhaps to a lesser degree, in regard to those parts of the northern portion of the concession which border upon the seaport towns of Dongarra and Geraldton. The plan of the Midland Railway which prefaces this section, clearly shows the area within which the Company has selected land according to the right conferred by the original concession granted by the Government.

Leaving the Government System at Midland Junction, the Company's line runs through somewhat uninteresting level country for 40 miles to Gingin ; but not far to the east, and along the course of the Chittering brook, running parallel to the railway, a number of small farms have been established, the soil being here and on some of the open land around, of a reddish clay, or light sandy loam, suitable not only for raising cereals and root crops, but also for growing vegetables and fruit of all kinds. Lemons of the largest size are produced in this neighbourhood. Gingin may claim to be one of the prettiest and best settled districts in the colony, some 3,000 acres being under cultivation. The land, being of great excellence, is in much demand, and it is well watered by the Gingin Brook, a clear, copious and perennial stream. The rainfall averages about 25 inches annually. In this district twenty bushels of wheat per acre is an ordinary yield, and this result is attained without the use of fertilising agents, fallowing being the only recuperative means adopted. Vines grow luxuriously here, besides citrous fruits, also root crops, peas, cabbages, beet, mangold, etc. ; and with such an abundance of these latter products this should be a great cattle-raising and dairying district.

Proceeding onwards from Gingin, the line turns nearly at right angles from the main northerly direction, and crosses the Darling

Ranges by means of breaks in the hills, resuming the northern course on the inland side. The next settlement of note is Bindoon, among the hills, which are here covered with soil, the valleys containing a fertile red clay or loam. The settlers early discovered the productive properties of this soil, and Bindoon has known cultivation—of the rough West Australian kind—for some years past. A good road connects the whole district with the railway, and an abundant supply of water is tapped at shallow depths anywhere within its limits. At present the farmers only raise a few cattle, pigs and horses, and grow wheat (20 bushels to the acre) as feed for their stock. But by the advent of the railway, with the facilities it gives for reaching the central market, a great change has been wrought in the condition and prosperity of the district.

Here, too, the hill slopes are most suitable for viticulture, as also for oranges, lemons, apples, peaches, pears, almonds, tomatoes, mulberries, and all kinds of delicate fruits, which grow to a large size and are of excellent flavour. The luxuriance of the natural conditions may be gathered from the fact that tobacco, linseed and flax grow as weeds. Lucerne in the deeper soil can be cultivated as food for cattle, either in the raw or as ensilage. Pumpkins, mangolds, and all kinds of vegetables are raised without trouble; and the flowers and fruits of all climes simply luxuriate. It is calculated that were the dairying industry carried on in these districts with any regard for scientific principle in the selection and preparation of fodder, cows could be milked for fully eight months in the year!

Keeping a northern course, and passing over the Moore River, the railway skirts the sand plain on the coastal side, with good country stretching away to the east. This sand plain to the west is only a strip some 15 miles in width, and behind it lies the excellent open country, already mentioned, of the Yatheroo and Dandaraga districts, which is available for selection and is in every way suitable for settlement.

Seventy-six miles from Midland Junction is Gillingarra, the station for the New Norcia Roman Catholic Mission Settlement. This mission is one of the wonders of the colony. Here, a large monastery has been established, with workshops, farm buildings, flour-mill and village, the whole being under the supervision of Bishop Salvado, the head of the mission. The soil is not by any means the best to be found along

the line ; yet by inculcating habits of industry into the natives, it has been made to yield abundantly. With some forty monks to help him, the good bishop has simply worked wonders. Some 200 acres are cultivated, and wheat, barley, oats, vines (for wine-making), figs, almonds, oranges, apples, pears of prodigious girth, tomatoes, mulberries (for silk worms), tobacco, linseed, olives, and all kinds of vegetables, are produced. Snuff, olive oil, soap and candles are manufactured ; and the mission, besides owning thousands of sheep and hundreds of heads of cattle, breeds a superior class of horse for sale, Water is found in shallow wells. The native village consists of neat cottages, wherein the West Australian aboriginal has been taught to live in cleanliness, decency and comfort, and contains a bakery, tannery, and carpenter's shop. A more self-sufficing settlement probably does not exist ; and now that the railway has opened the way to the markets, an export from the mission of agricultural, horticultural and viticultural products, should begin. The work done by the mission conclusively shows how wonderful are the capabilities of the soil of the country if cultivated with ordinary care and intelligence.

Further northwards, at Berkshire Valley and Marah, are large farms where wheat is grown luxuriantly. Cattle, pigs and sheep, are also successfully raised, the wool from the latter forming an item of export. Here water is found by sinking, and is conserved without trouble. North of Marah extends a twenty-five mile stretch of sandy country, in which the poison plant at present flourishes. It requires to be eradicated periodically from settled country, as it is fatal to stock.

Carnamah, 169 miles from Midland Junction, and 108 from the northern terminus of the Company's line, is the centre of an agricultural district, the land having a rich chocolate soil. There are also several sheep-stations in the country round. The extensive deposits of salt in lakes in the neighbourhood might become a source of profit, combined with the curing of ham and bacon. The land is level and the scrub upon it can be removed by heavy rollers, when it will yield from fifteen to seventeen bushels to the acre. As the cost of clearing is small, the land in these parts should be taken up in large farms, the steam plough being brought into use.

Along and to the east of the line for 35 miles north of Carna-

mah the land is of excellent quality ; and approaching Yandanooka there is rich loam soil only sparsely timbered, suitable either for agricultural or grazing purposes, and reaching as far as Mingenew.

From Mingenew the line runs due east for 36 miles to the small port of Dongarra, and then turns north again for 24 miles, finding its termination at Walkaway Junction (277 miles from Midland Junction), the point of connection with the Government line to Geraldton. To the north and east of the line from Mingenew is the broad, treeless, fertile valley of the Irwin river, where the soil is of a rich loam and the rainfall averages some 18 to 20 inches annually. The succulent grasses and saltbush which cover this prairie afford the most suitable kind of sheep-feed ; and were the full benefit derived from its natural advantages, the Irwin plains would equal any pastoral property in Australia. For agricultural purposes the land is equally suitable, little clearing being required and water being easily obtained and conserved.

Over the Company's line when extended to Mullewa, will be carried all the railway traffic from the capital and southern parts of the colony to the important mining centres of the Murchison. The direct connection thus afforded with the goldfields, will also provide the settlers in the agricultural areas along the course of this railway, with an enormous market for their produce.

Some very sound advice is given by an eminent authority, in the following words, regarding the use to which these lands should be put ; and what is here said in special reference to the areas along the Midland Railway, is also applicable to the lands of the colony in general ;—" Systems of husbandry hitherto unpractised will by degrees be introduced, and crops and products best suited to the soil, the locality, and the climate, will be raised. This is particularly the case with cereals, vines and oranges, in the cultivation of which great ignorance prevails. In respect to vines, the absurdity of growing many varieties in one plot or locality, and of attempting to make as many varieties of wine (badly) is a feature of the Eastern colonies ; instead of which, greater success would assuredly reward the efforts of those who, by careful experiment, first ascertain the variety best suited to their land and its conditions, and confine their attention thereafter exclusively to its cultivation. The survival of the fittest applies to plants, as it does to animals. To my mind the

successful settler of the future will be one who is not bound hand and foot by arbitrary lines, but one who will cultivate thoroughly and well every product that his land will yield and for which there is a market. A farmer must combine pig and cattle-rearing and dairying operations on as large a scale as possible, along with that of growing cereals. He must not impoverish or tax his land by raising only one kind of crop year after year, but should continually vary the crop. He should grow root crops, and practise ensilage, grow peas, cabbages and beet, to feed his cattle, and return these again to the soil in the shape of manure. To fertilize the soil is is the first duty of the true farmer. Every settler or farmer should plant fruit-trees and vines suited to the soil and climate. He should be a grower of the best varieties, and sell his fruit as he would cereals. . . . There is practically no limit to the products that the glorious climate and generous soils of the Midland estate will produce to reward the skill and labour of the thoughtful, industrious and frugal settler and his family."

The following eloquent exposition of the duty of bringing in the New World to redress the evils of the Old, is from a paper read by Miss Shaw, who, it will be remembered, travelled through the Australasian colonies not long since as the representative of the London *Times*. The paper was delivered at a meeting of the Royal Colonial Institute on January 9, 1894, and, as it deserved, attracted great and general attention. Hear her :—"I have tried to touch for a moment on the principal sources of Australian wealth. All of them are in the soil. What Australia needs is that they should be dug out of the soil, and so placed upon the markets of the world. How best to get labour into direct operation upon her natural wealth is the problem which she has set herself to solve. She is attempting it in ways which have not yet been tried elsewhere. The theory of the movement is that, as the Government has everything to gain by the improved value that labour will give to the land, it runs practically no financial risk in putting labour, under certain carefully defined conditions, upon the land. If this theory be proved to be correct, the back of the unemployed difficulty will be broken, not only for Australia, but for the Empire. As the problem stands at present, we have, on the one side, in all crowded centres a surplus of hands and a deficiency of bread and money.

Mr. Giffen's statistics go, I think, to prove that we produce every day in England alone 1,200 pairs of arms more than we need, assuming the present density of population to be sufficient. We have, on the other side, in the outlying portions of the Empire, immense beds of natural wealth. Corn and meat, and wine and gold are waiting only for hands to bring them out of the earth in which they lie. The question is one of intelligent organisation—how to get this labour upon the land? If it were solved, our surplus pairs of hands should become no less valuable as an export to us than surplus wool or mutton is to Australia. It seems inconceivable that with the factors of the sum so plain, and the need to find the solution so pressing, it should remain for ever without an answer.

"The want of capital, it is said, is the great difficulty. Again, intelligence replies that capital to invest in a really profitable enterprise can never be long wanting. The cultivator, it is presumed, will, in his bettered circumstances, be able to repay both capital and interest. But if this experiment succeed, Australia will want labour for generations to come. There will be an end of the refusal to admit the working man. He will be a factor in the sum of national wealth. His presence will be as much desired as it is now, in some circles, dreaded. For he will no longer hang about the towns, dividing with an already over-stocked labour market the small amount of what may be called secondary employment, which the wants of civilization provide for those who have the skill to satisfy them. He will go straight out upon the land and produce wealth where there was none before. There need be practically no limit to the employment of this class of labour until every acre of unoccupied land is not only taken up, but is producing all that science and nature can enable it to produce.

"I have, I hope, indicated some reasons for believing that the Australian outlook is one which promises prosperity and interest to Australia, and is at the same time replete with possibilities of general advantage to the Empire. These are the possibilities which render the consideration of Imperial questions so intimately and engrossingly attractive. If it be true, as we are constantly told by social reformers, that the difficulty in such a country as ours (England) is the want of room; if by expansion we can give the room, and then find that the people of our own race, in all portions

of the world where they are organizing the development of this expanded Empire, are in very truth providing opportunities for the happier, healthier, more intelligent and more prosperous life of the multitude ; that natural conditions, instead of being against, are in these circumstances in favour of the majority ; that children born hereafter will have their chance of being born to joy indefinitely increased by the extension of the area of civilization which this century has witnessed—then, I think, we may legitimately feel that the work of empire-making is work in which none of us need be ashamed to join."

These are the terms in which the Premier of Western Australia laments the import into the Colony of products which the soil of the country is only awaiting the tiller's attention to yield in abundance :—"I regret that we have still to import a large quantity of agricultural and dairy produce, and I regret also to see that these imports are increasing. In 1893 we imported £46,120 worth of flour. In 1894 we did not import quite so much, the amount being £44,300 worth. Of grain, hay, chaff, potatoes, and onions, in 1893 we imported £43,578 worth, but in 1894 the importations were valued at £104,698. Of butter, bacon, hams, cheese, eggs, etc., in 1893 the imports were £66,803, and in 1894, £102,344, so that taking these items, which constitute the main agricultural produce of the colony—articles we can so well grow in this country—we find that in 1893 we imported £156,501 worth, and in 1894, £251,342 worth, or an increase during the latter year of £94,841 worth."

All particulars as to the terms and conditions upon which land can be taken up on the estate of the Midland Railway Company of Western Australia, may be obtained on application to the Secretary at the offices of the Company, St. George's Terrace, Perth, Western Australia.

Following the example of the Government, the Company arranges for land to be taken up on easy terms on its selected areas for the purposes of farm homestead associations.

The coloured plan of the route and lands of the Midland Railway, which precedes this section of the book, shows the areas open for settlement, as well as the distances, towns, stations, and sidings along the route.

Following are the agricultural areas along the Midland route, which have been specially set apart by the Government :—

KOOJAN AGRICULTURAL AREA.

This area, which is situate about 100 miles north of Perth, was opened for selection in November, 1894, and contains 14,000 acres, of which 9,209 acres have been surveyed into 62 blocks. At present there are eight settlers here, who hold between them 3,156 acres. The Midland Railway line runs along the eastern boundary of this area. A branch of the Moore River runs through the western portion of this area. A large number of selections took place in the vicinity just previous to the area being gazetted. It is therefore probable that much land here will be taken up by persons desirous of increasing their holdings, as well as other new selectors. This land is suitable for corn-growing and fruit-culture. The cost of clearing would be about £4 per acre.

DALAROO AGRICULTURAL AREA.

This area, which is situated north of, and adjoining the Koojan Area, was opened for selection in November, 1894. It contains 9,000 acres, of which 3,685 acres are surveyed into 23 blocks. There are at present no selectors on this area. It adjoins the western side of the Midland Railway line. A townsite (Moora) has been laid out in this area, consisting of 89 town and 62 suburban lots. The land here is somewhat similar to that in the Koojan Area. The average rainfall is about 20 inches. A branch of the Moore River runs through the area ; there are also some small swamps, suitable for gardening purposes.

THE GREAT SOUTHERN RAILWAY.

Like the Midland Railway just described, the Great Southern Railway of Western Australia was constructed on the land-grant plan, the terms of the concession being the same, viz :—the concessionaire company receiving a subsidy of 12,000 acres per mile, to be selected east and west of the line, within a belt 40 miles wide on each side. A further proviso limits the concession to only one-half of the frontage for 20 miles in continuous length. These sufficiently liberal terms have invested the West Australian Land Com-

pany Limited—which corporation constructed and owns the Great Southern Railway—with a picked estate of altogether over 2,900,000 acres, comprising extensive areas of most fertile country. The selections have been made with great judgment, and the terms upon which the land held by the Company are to be obtained for settlement, varying in price according to situation, can be obtained on application to the secretary at the head office in Albany. Along the Great Southern route the Government has also thrown open large areas for selection, particulars of which are given in following pages.

It is well said in the official *Handbook of Western Australia*—a publication containing much valuable information with regard to all the affairs of the colony—that "of all the private undertakings in Western Australia, none has had a more distinct and important bearing on its welfare and general advancement, than the Great Southern Railway." It is one of the main trunk lines of Western Australia, connecting the capital, as well as all the northern and eastern districts, with the colony's safest natural port at Albany, King George's Sound, where the ocean-going mail steamers, as well as the vessels of the inter-colonial and coasting lines, call on their way to and from the ports of the eastern colonies of Australia. A reference to the first map in the book will at once make clear the importance of the Great Southern line in relation to the railway system of the colony. It will be seen to run from Albany, on the southern coast, taking a general north-westerly direction, to Beverley, where it connects with the Eastern division of the Government system. The distance from the jetty at Albany to Beverley is 243 miles ; and the line was opened throughout for traffic between these two points on June 1, 1889.

Along the whole route of this railway, as with the other lines of the colony, the country possesses no features which entail difficulties in the way of railway construction ; and the line, which was laid by Messrs, C. & E. Millar, of Melbourne, is agreeable for travelling, the running being generally smooth. Where the country is not level it has the same characteristic of gentle undulation as along the route of the South-Western railway. The ruling grade is 1ft. in 50ft., which is maintained for a mile and a half. The rest of the gradients are

easy. The line is single throughout, and the gauge is the same as that of the rest of the railways in the colony, viz., 3ft. 6in. in width, the rails weighing 46¼ lbs to the linear yard. On this road the 4-wheel-coupled locomotives of the Company, having "drivers" of a diameter of 4ft. 4in., easily take a train-load of twenty-three waggons, loaded to five tons each, up any grade on the route. A "mixed" train passes over the line each way every week-day, and a through mail train, in connection with the ocean steamers, is run each way weekly as required. The mail train is timed to accomplish the distance from Albany to Beverley (241½ miles) in 11¼ hours, or at the rate of 22 miles per hour throughout, including stoppages. The locomotives in use are capable of considerably higher speed than this; and no doubt before long the increasing needs of the traffic over this great length of important railway will demand a faster, as well as a more frequent service, to admit of which heavy rails will be required. Being so important and inseparable a part of the railway system of the colony, the Great Southern line will, as time goes on, be more and more called upon to fulfil through-transport duties; and as settlement proceeds in the different suitable areas along the route, the local traffic between the various centres of the large and generally cultivable portion of the colony through which it passes, is bound to assume large proportions—with the beneficial result that an augmentation of traffic usually has on the revenue a railway.

The scheme of the Great Southern Railway owes its origin to the late Anthony Hordern, a wealthy, energetic and far-seeing merchant of Sydney, New South Wales, who, before the gold discoveries at Yilgarn and Coolgardie, was keen enough to see that great prosperity awaited the opening up and occupation of the fertile southern and south-western portions of Western Australia. He promoted this line of railway with the aim of developing the abounding resources of those parts. Had he lived, doubtless much more would ere this have been achieved in this desirable direction; for Mr. Hordern intended to employ the wealth he had accumulated in business, in furthering the purposes he had in view in regard to this colony. But he died in September, 1886, on board the mail steamer Carthage on his way back to Australia from England. And a granite monument standing in a conspicuous position in

Albany remains to perpetuate his name as the founder of the Great Southern Railway of Western Australia.

The head offices of this private line, together with the locomotive and general workshops, are located at Albany, whence operations are directed. Mr. J. A. Wright, who was a member of the Legislative Council of the colony and has also filled the positions of Commissioner of Railways and Engineer-in-Chief, exercises supreme control as Managing Director for the West Australian Land Company; while Mr. J. T. Short administers the traffic department of the railway. Mr. Wright also holds the position of Consulting Engineer to the Government.

Passengers from Albany to Perth, and *vice versa*, generally break the journey at Beverley, sleeping at the latter place and proceeding on their way in either direction by the morning train. They will find ample accommodation at Beverley as well as refreshments. The ordinary train leaves Albany on Mondays, Wednesdays, Fridays and Saturdays at 7.30 a.m., arriving at Beverley at 8.29 the same evening. On Tuesdays and Thursdays it departs from the terminus at 5.15 p.m., and reaches Beverley at 5.30 the next morning, whence the journey over the Government system is continued by the train leaving for Perth at 6.30 a.m. The train from the capital leaves the Central Station at 3.30 p.m., and arrives at Beverley at 8.10 the same evening. The journey to Albany over the Great Southern line is resumed by the train leaving Beverley for the South at 7 a.m. on every week-day except Monday. On that day the train from Perth arriving at Beverley at 8.10 p.m. carries the weekly mails for the Eastern colonies, which are shipped at Albany. Consequently the train is run through, leaving Beverley at 8.35 p.m. and arriving at Albany at 8.30 next morning. From Albany to the capital a special mail train is run as required.

To view the country along the Great Southern route, the trip should, of course, be made by the day-train from either end. But passengers obliged to travel by night will find that comfortable carriages are provided for their conveyance. Before long, however, the latest and most improved fashion of sleeping-car for narrow-guage railways will be run on the night trains throughout the colony. The railway journeys in Western Australia are

mostly long, and the rate of travelling is slow, so that sleeping-cars may be said to be an absolute necessity.

From Albany to Mount Barker (38 miles) the route of the Great Southern Railway rises gradually to an altitude of 830 feet above sea-level. From Mount Barker it drops into a valley, rising again to 862 feet at Kendenup (50½ miles) and continuing upwards by very gradual gradation to 946 feet at Tenterden. ("Round Swamp" on the map.) From Tentenden (60 miles) there is practically table-land to Broomehill (103 miles), which station is situated at an altitude of 1073 feet above the plane of the sea. Twelve miles further and Katanning, the midway station, is reached (115 miles from Albany, 126½ from Beverley). The altitude here declines to 1022 feet, falling still further to 840 feet at Wagin Lake station (147¼ miles from Albany). Thence it rises gradually to the highest level of 1315 feet a little way past Narrogin (178 miles). From that point the decline is similarly gradual during the rest of the distance of 63½ miles to Beverley, where the altitude of the line is 649 feet above sea-level.

The direct connection of Albany, by the Great Southern line, with the rest of the more inhabited parts of the colony has naturally had an immense effect in the development of goods traffic over this railway, freight landed from the steamers from Europe as well as from the Eastern colonies, being conveyed by this route direct to the capital as well as to the central, eastern and northern districts; and goods landed at this port on one morning have been displayed in the shop windows of Perth the next afternoon. Such an achievement is a complete revolution of the old, slow-going methods of the West Australia of yesterday—times when the mail coach occupied five days in travelling from Albany to the capital. Truly, "the Old Order changeth, giving place to the New."

The inwards passenger traffic is also large, and is becoming larger with the increase of the influx of population into Western Australia, in search of gold or of the opportunities for earning a livelihood which the progress the colony is making may afford. The trains come laden from Albany on the arrival of the steamers from the other colonies; and a journey inland from the terminus gives to the observant traveller opportunity for studying human nature in some interesting moods. The tone of the new-comer is invariably

sanguine. He has come to Tom Tiddler's ground to pick up gold —nothing so common as silver for him! He is going to make a fortune rapidly; and then, a man of means and leisure, he is going to enjoy himself for the term of his natural life. Perhaps he has a family, which he has left behind in one of the other colonies to the eastward until he can either afford to bring them over and settle in these golden regions of the west, or return to them laden with the yellow bane which wise men tell us is "the root of all evil," but of which, nevertheless, it is so pleasant to have a store. The "T'other-sider," as the East Australian is termed over here, is not the man to anticipate failure. He knows that to be brimful of hope carries one half way to success. Perhaps—ah! very probably—he has known misfortune, even perhaps ruin, on "t'otherside" of Australia, where times have been so unprecedentedly bad. He means now to make a grand effort to retrieve his fallen fortunes. All honour to his courage! He tells you confidentially that he has "done with speculation for ever." "Once I've made a rise again," he says, "you won't catch me running any more risks." May he always preserve that frame of mind! And if long experience has brought thoroughly home to you the truth of that old saying about the fate which generally awaits good resolutions, be careful not to let a cynical doubt find expression while in his company. A man who is courageous enough, after a knock-down blow from Fortune, to rise again and continue the struggle with the determination to "come out on top" deserves your best sympathies and all the encouragement you can give him. Of such well-wearing stuff are the pioneers of civilization made. We must, on no account, anticipate failure for the "t'other-sider" who, taking his life and the fortunes of his family into his brave capable hands, comes to West Australia with a sturdy frame and a stout heart to win his way back to the position of combined independence and comfort from which the unkind force of circumstances has perhaps thrust him in the (at present) languishing sister colonies. Should we not help him all we can in his struggle with stubborn nature?—if not out of the purely disinterested spirit of good fellowship (rare, indeed, in this world) then at least from the more selfish motive which springs from the knowledge that the strenuous work of his hands, in whatever honest occupation he may engage, must result in our gain as members of the community at

large—a small community as yet, on the advancement of which individual effort may have a perceptible effect.

For the convenience of passengers by sea intending to proceed from Albany to inland parts of West Australia, the principal steamship companies of England and Australia book through-passages over the railways of the colony; and the Great Southern line derives benefit from the traffic created by this up-to-date arrangement.

Light refreshments may be obtained at most of the larger stations of the Great Southern Railway; and at Katanning, the midway halting-place, the train stops long enough to enable the passengers to comfortably dispose of a substantial meal. With the ever-continuing increase of the traffic on all the railways of the colony, further and improved arrangements for supplying the material wants of passengers are becoming necessary. The traveller in West Australia hardly expects to find at wayside stations such provision for his comfort and the renewing of the "inner man" as he would meet with on the English railways, for instance. But it is a question whether some eminent firm of refreshment contractors in the Old World would not find a very remunerative field in the Australian colonies for catering operations on a large and complete scale. In these thirsty lands, the traveller requires considerable "keeping-up" with strong waters; and, as regards solid refreshment, a meal well-cooked, well-served, and adapted to the climate, makes a pleasant break on the long journeys which are common in the colonies, while more should be seen of the fruit and wine of the country, which should be daintily presented. There is always money to be made in the business of feeding one's fellow-creatures, if but the secret of attracting the taste and satisfying the palate be mastered. It is no great secret, after all—merely a matter of attention, cleanlines, civility and some artistic aptitude, together with a fair stock of common sense. *Verb. sap. sat.*

A pleasant place of residence at most times of the year is the sea-side town of Albany. Particularly is it agreeable to come down here from the sweltering inlands during the hot mid-summer months, and find health and re-invigoration in this cooler clime, where the full benefit of the fresh breezes from the Southern Ocean is to be enjoyed. The town occupies a good site on ground rising

from the sea-floor-level to a considerable height; and possesses public edifices, churches, hotels, shops, stores, commercial buildings and private residences, all of a substantial character. With Princess Royal Harbour as a safe haven, and the added importance of the defensive works at King George's Sound, being also the first and last port of call in Australia for the ocean liners running between Europe and this Austral continent, Albany's prosperity is well established.

The town jetty at this port runs out some distance at an obtuse angle to accommodate the intercolonial steamers. The West Australian Land Company also possesses a loading-pier of a length of half a mile and built of karri. From Albany eastward runs the slender wire upon which, passing over thousands of miles of yet unoccupied territory, depends direct telegraphic communication with the Eastern colonies; and a memorial stone in front of the Post Office bears an inscription stating that the worn pole it supports was the first post erected for the line connecting the colony with the rest of the Australian and the European telegraphic system, and that it was planted by Governor Weld on the 1st January, 1875. Here also arrived the intrepid explorer Eyre, after his terrible march across the desert country lying eastward. The population of the town and immediately surrounding district is estimated at between 3,000 and 4,000 persons. From the summit of Mount Clarence behind the town, a fine view of the harbour and Sound is to be obtained, having, when seen under favourable circumstances of light and weather, all the charms of a varied sea-scape.

The country served by the Great Southern railway may be said to be as a whole cultivable and suitable for the growth of cereals, fruit and vines, according to the situation and the exact quality of the soil in the part selected. At Katanning, a widely and well-settled district, Messrs. Piesse, besides some 250 acres under cultivation for wheat, have a magnificent orchard; and the West Australian Land Company also owns an orchard with over 1000 fruit-trees and 6000 vines for raisin grapes. From this property, peaches hanging on the trees the night previous have been sold next day in Albany for 1s. 11d. per dozen. Another fruit that does exceptionally well in the Southern districts is the apricot.

Mount Barker, 38 miles from Albany, is also famous for its

fruits, particularly apples. Ten boxes of this orchard product from here gained first prize at the last Horticultural Exhibition in Melbourne.

At Wilson's Inlet, a little to the west of Albany along the coast, and up the river leading into it, boring for coal has resulted in some good specimens being raised.

The Southern districts are all well watered, many a lake and pool of fresh water being visible from the train. One of these, named Grassmere, lying beeween the hills which form part of the barrier coast-line, has been stocked with Murray cod and eel. The station garden at Torbay Junction, 9 miles from Albany, shows a black loam soil having a rich fertile appearance ; and passing Narrogin (178 miles from Albany) a stretch of splendid-looking land has been turned up. Indeed, wherever, along this route, the plough has been used, Mother Earth seems to be in her most accommodating mood.

The south-western corner of the colony (*vide* first map) is the true home of the famous hard-woods of Western Australia, though jarrah is to be found all the way along the Darling Range. Forests of the majestic karri stretch inland from the coast all the way from Albany to Augusta, going westward, and extending north of Augusta in the direction of the Blackwood River. A line drawn from Donnybrook, the present terminus of the South-Western line, to Mount Barker, on the Great Southern Railway, would be about the northern limit of the karri country proper. Here this stately and valuable tree is found both in company with the useful jarrah and in blocks by itself, the rich red loam soil of these parts being proper for its growth to its full proportions, and one particular forest comprises thirty grown trees to the acre, while as to individual size, it must suffice to state that in one fallen tree a man lived and raised a family. As yet the tuart, the heaviest and strongest of West Australian woods, has only been discovered in one locality, extending from the Vasse River to Bunbury. The Wandoo is another most serviceable wood that must not escape mention in connection with the Great Southern Railway, being used for sleepers on this line. For this purpose it is eminently suitable, being both heavy and hard and not liable to climatic influences. It has been proved to have a life of thirty years. The

salmon, yate and York gum are also found in this district, as well the red gum of West Australia. The last-named has little value as timber, but is a handsome tree and gives a good shade. Its presence is, moreover, a sign of good soil.

Karri and jarrah, both of the great family of the eucalypti, are very much alike in colour and general appearance. Karri possesses a longer fibre and is consequently tougher, but jarrah stands wet better, having rivals in that respect only in Indian teak and sissoe. It is impervious to the attacks of the teredo (saltwater worm) and is consequently in great request for piles for jetties, &c. The "blackboy," a species of Xantherea, is also found along the Great Southern route. This curious plant is full of a resinous matter which is extracted for medical purpose. Some is also sent to Paris to be used for water-proofing. This resinous quality renders the wood unquenchable when once set on fire, and many a settler or wanderer camping out on the marshy ground or in the cold and wet weather, has had cause to fervently bless this property in the "blackboy." It may be remarked that Sir John Coode, the eminent engineer who was consulted by the Government of the colony in regard to the proposed harbour works at Fremantle, held the opinion that the "blackboy" would be found to have a high mercantile value for the resin it contained.

About Cuballing, a station on the Great Southern line, 187 miles from Albany, sandalwood is found in great quantities; and it is reckoned that altogether some £120,000 worth of this wood has been taken away from the colony. At Pingelly, 23 miles further north along the line, the Bureau of Agriculture, to repair the denudation, has established a plantation of this wood. In regard to this enterprise, the Conservator of Forests, Mr. J. Ednie Brown, has reported as follows :—

"I may say that I consider this experiment as one of considerable value to the settlers there and in other parts of the colony where the sandalwood tree will grow. There is much to commend it to the farmer as a crop to grow upon the portions of the farm which are otherwise unsuited to more immediately profitable ones. It is a crop which can be easily put in, and the expense of doing so would be very small to a farmer with the necessary labour and appliances at his command. Of course the present market value of

sandalwood is not very encouraging for such an enterprise, but it may, I think, be safely anticipated that the present depression will not last long, and that a revival to former prices will come as a matter of course before long."

It is satisfactory to know that the Government, recognising the importance of the timber industry, is taking steps, on the advice of Mr. Ednie Brown, in the direction of the proper cultivation and conservation of the valuable forests which form so appreciable an asset of the natural wealth of the colony ; and before long it is certain that short lengths of railway will be run from the main lines up into the timber country to tap these sources. Already something has been done in this way. Messrs. Millar Bros. have constructed a line from Torbay Junction on the Great Southern Railway for some 15 miles west along the coast, to tap the forests at Torbay where they have erected saw-mills, and they intend to extend these operations to the abundant timber on the Denmark River, some 40 miles from Albany. The demand in the world's market for West Australian hard-woods is far in excess of the present means of supply.

In the country along the Great Southern line excellent sport is to be had. Ducks, teal and other water-fowl abound on the lakes ; kangaroos, wallabies and opossums are to be found in the "bush," while sea-fishing may be pursued with satisfactory results in the inlets along the coast.

Following is the latest information published by the Government Lands Department in regard to the agricultural areas along the route of the Great Southern Railway set apart by the Government either for *free* homestead farms (of 160 acres each) or for conditional purchase of larger blocks of land under the easy conditions fixed by the Homesteads Act of 1893 :—

"The largest number of areas are situated adjoining or near the route of the Great Southern Railway between Beverley and Albany, and are as follows :—Beverley, 35,000 acres ; Moorumbine, 29,328 acres ; Narrogin, 25,000 acres ; Wickepin, 97,000 acres ; Wagin, 26,000 acres ; Darkan, 62,000 acres ; Katanning, 100,000 acres ; Ewlyamartup, 46,000 acres ; and Tenterden, 30,000 acres. The only other area in this locality not yet thrown open is that of Pallinup, containing 180,000 acres. These areas are specially

adapted for grain-growing and fruit-culture, both of which industries are being vigorously prosecuted at the present time.

"It might be thought by some that the enterprising West Australian Land Company had exhausted all the best of the land along their line by their extensive selections, but this is far from the case, as the land was selected by them along the line subject to the condition that the Government should divide the frontage with the Company. There are already nine agricultural areas open by the Government for selectors along the Great Southern Railway, comprising 450,328 acres, whilst one (Pallinup) of 180,000 acres has been gazetted, but is not yet thrown open for selection. Of the amount thrown open 40,937 acres have been taken up in the different areas, principally at Katanning, by 96 settlers, a satisfactory number when it is remembered that only one of these areas has been open just three years, whilst some of them have not yet been open 12 months. Lying, as they do, along the route of a splendid line of railway, between the capital of the colony and Albany, the port of call of the great ocean liners, with land admirably adapted for the growth of cereals, and in many places of fruit and vegetables, these areas possess many inducements to settlement.

BEVERLEY AGRICULTURAL AREA.

"This area, which by rail is 103 miles from Perth, and 238 miles from Albany, and is also within five miles of the rising town of Beverley, was gazetted open for selection in September, 1893. It contains 35,000 acres, and adjoins the Great Southern Railway, also fronting on the Dale River. The timber on this country consists mainly of York gum and jarrah, and it is estimated that the average cost of clearing would be from £3 to £4 an acre. The soil is well adapted for the growth of cereals, and fruit also thrives on such country, all of which will repay selection and cultivation. Here, as in the Meckering Area, a man should select a square mile of land for the purpose of mixed farming, for which it is especially suited. Eleven selectors have already secured 4,043 acres of this area.

MOORUMBINE AGRICULTURAL AREA.

"This area was gazetted open for selection in July, 1893. It possesses the advantage of having the Great Southern Railway running directly through the middle of it, and adjoins the Brookton

siding, at Seabrook townsite, which, by rail, is about 223 miles from Albany, 20 miles from Beverley, and 118 miles from Perth. The land is much the same as that in the Beverley Area, and the remarks which apply to one apply to both. It is expected that these areas will be largely availed of for cereal-growing and fruit-culture. Five selectors have taken up 1,754 acres of this land.

Narrogin Agricultural Area.

"The Narrogin Agricultural Area was opened for selection in March, 1893. It contains 25,000 acres, of which 12,782 acres are surveyed into 42 blocks. There are 13 settlers on this area, who hold amongst them 6,666 acres. This is also a good corn-growing area, and it directly adjoins the Great Southern Railway, and is distant only two miles from the Narrogin railway station, which is about 64 miles from Beverley, 179 miles from Albany, and 162 miles from Perth.

Wickepin Agricultural Area.

"The Wickepin Agricultural Area was opened for selection in March, 1893. It contains 97,000 acres, of which 37,195 are surveyed and cut up into 222 lots. There are 9 settlers upon this area, which is about 10 miles from the Great Southern Railway, and they hold between them 5,539 acres. This is regarded as an especially good area, much of the land being of an excellent description, and well suited for the growth of both cereals and fruit. The timber is chiefly York gum and jam, and the country would cost about £3 an acre to clear. Excellent roads lead from the railway to this area, which is served by the Cuballing siding, which is situated, by rail, about 55 miles from Beverley, 188 miles from Albany, and 153 miles from Perth. Good water has been obtained by sinking at shallow depths in this area.

Wagin Agricultural Area.

"This area was thrown open for selection in November, 1892, and contains 26,000 acres, of which 16,421 acres are surveyed. Only a limited portion is rich enough for the growth of cereals, but much of the land is suitable for fruit culture. At present there are five settlers on this area, who hold between them 1,287 acres. As the area is situated on the Great Southern Railway, adjoining Wagin Lake townsite, the position of which is herein described, and as there is already considerable settlement in the vicinity, on the

West Australian Land Company's selections, no doubt there will be much enquiry for land in this area later on. Puntaping townsite is situated within this area, consisting of 44 suburban lots, averaging from 4 to 13 acres each.

DARKAN AGRICULTURAL AREA.

"This area was opened for selection in April, 1894. It contains 62,000 acres, of which 12,131 acres have been surveyed into 52 lots. This area is distant from the Great Southern Railway about 30 miles, and may be said to be situated between Wagin on the east, and Bunbury on the west. There are good roads leading through the area, and on to the Wagin railway station, which is 94 miles from Beverley, 149 miles from Albany, and 192 miles from Perth. This area contains a fair quantity of rich soil, and has a splendid rainfall. A branch of the Hillman River runs through it. The land would cost about £4 an acre to clear, and is well adapted for fruit and cereals. At present three selectors hold land to the extent of 856 acres.

KATANNING AGRICULTURAL AREA.

"This is one of the largest and best agricultural areas in the colony, and settlers located thereon have already achieved a considerable measure of success. It was opened for selection in January, 1892, and contains 100,000 acres, of which 40,997 are surveyed into 282 blocks. Of this amount, 19,707 acres have been taken up by 45 selectors. Situated between Beverley and Albany, by rail about 127 miles from the former, and 116 miles from the latter place, and 225 miles from Perth, close to the central station, and chief stopping-place on the Great Southern Railway, and a flourishing settlement thrown open by the West Australian Land Company, this fine area was bound to attract settlement; this it has already done in a marked degree. The suitability of this portion of the colony for cereals is largely demonstrated by the establishment of a first-class roller flour-mill at the townsite of Katanning, by Messrs. F. and C. Piesse. The land costs from £3 to £4 an acre to clear, and water is obtainable, especially after clearing. The Great Southern Railway runs right through the area. Besides a net-work of roads running for the most part parallel and at right angles, three townsites are laid out along the line within the area, Woodamilling, Moojebing, and Pinwernying, and for the encouragement

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of village settlement 394 town and suburban lots of from threes quarters of an acre to 18 acres have been surveyed. No doubt this is one of the best areas yet declared in the colony, and the settlement already taking place here is encouraging. The peculiar suitability of this land for fruit culture is brought prominently before the notice of the public by the splendid orchards which have been planted close to Katanning townsite by Messrs. F. and C. Piesse and the West Australian Land Company.

Ewlyamartup Agricultural Area.

"The Ewlyamartup area was gazetted as open for selection in March, 1893. It adjoins the Great Southern Railway in the vicinity of Broome Hill, which is an important settlement thrown open by the West Australian Land Company, situated by rail 139 miles from Beverley, 104 miles from Albany, and 237 miles from Perth. It contains 46,000 acres, of which 39,258 acres are surveyed and laid out in 108 blocks ready for selection. The timber on this country is chiefly York and White gum. The land is in parts very good, and suitable for corn-growing. It would cost, on the average, about £3 an acre to clear, and there are good roads intersecting it, giving easy access to the railway line. The area is not particularly well-watered; but doubtless clearing would largely increase the supply, as in the case of other areas.

Tenterden Agricultural Area.

"The Tenterden Agricultural Area, along the Great Southern Railway is, by rail, 50 miles from Albany, and 291 miles from Perth. It was opened for selection in November, 1892, and contains 30,000 acres, of which 10,750 are surveyed into 58 blocks; as yet there are only five selectors, holding 1,085 acres. The land is chiefly timbered with white gum, and is of the same average quality as that of the other areas along the Great Southern Railway, much of it being suitable for corn-growing, and more of it for fruit-culture. A special feature in favour of this area is the large rainfall, which increases as a southerly direction is taken. This area has also been laid out and mapped with a view to village settlements, 55 town lots and 57 suburban lots having been surveyed and thrown open.

Pallinup Agricultural Area.

"This, the largest of the agricultural areas, is situated about 30

miles from the Great Southern Railway, to the south-east of Broome Hill. It comprises some 180,000 acres, but only portions along the various creeks are suitable for agricultural settlement. It is only partially surveyed, and has not yet been thrown open for settlement. The area contains some good land both for cereals and fruit-growing. Surface water is scarce, but supplies may be obtained by tanks and wells. It is intersected by the Pallinup River and Warperup Creek, with many tributaries, and gives promise, when opened, of becoming a much sought after and valuable area.

Speaking once more in general terms of the areas along the Great Southern Railway, they are essentially corn-growing areas, and are easily and comparatively economically cleared, whilst in many places the vine and fruit of all kinds will flourish abundantly. They are nearly all easily approached by the railway, which is well equipped with stations, sidings, and rolling stock, and which runs a daily service."

In all this part of the country there need be no fear of scarcity of water—the general bane of the whole continent—as amply sufficient falls in winter to last through the summer if stored in dams or tanks. The average fall at Albany is 36 inches per annum, diminishing along the line northward to 17 inches at Beverley. In most parts, too, of the southern and south-western districts water can be obtained by sinking to a depth of from 10 to 25 feet. Besides, where the land has been cleared, springs frequently make their appearance.

A man with ready hands and quick brain, if possessing some knowledge of general or "mixed" farming, will find not only the means of a comfortable livelihood for himself and his family on these lands, but also the conditions that make for affluence. The settler must not be afraid of a couple of years or so of hard, but not heart-breaking work at first—in clearing, fencing and getting the soil into order. After that his labour will be easy. If he continue to give intelligent attention to the capabilities of his land, his reward will be rich for small expenditure of physical energy. Moreover, he and his family will enjoy the inestimable blessing of living healthy lives in a perfect climate. On any one of these areas near the railway he will be in direct touch with the chief markets of the colony ; and he will find that the freight rates are low. His produce

of one kind or the other, will always command a fair price, for the demand is great, and, what is more, is growing with the rapid growth of the colony. I have already, and more than once, mentioned in this manual that the local supply of agricultural produce in the colony is nowhere near meeting the demand. Let me ask particular attention again to the quotation I give on page 82 from a public and official utterance recently made by the Premier of the colony, in which Sir John Forrest expresses his regret at the large import into West Australia of the very products her soil is, throughout the whole of the South-Western Division at least, eminently adapted to produce.

The West Australian Land Company, following the advantage of the Government, offers its land on very liberal terms to *bona fide* settlers. The price of the Company's selected land varies from 10s. to 40s. per acre, according to the quality of the land and the distance from a railway station or townsite; and if desired, the payment can be made by twenty annual instalments *free of interest.* But for the present and in order to encourage cash purchases, a discount of 20 per cent. will be allowed for cash where the purchase money is payable by ten annual instalments, and of 30 per cent. where it is payable by twenty annual instalments.

The vessels of the P. & O., Orient, Messageries, Adelaide, and other steamship companies call regularly at Albany; and the last-named company has arranged to issue return tickets to Albany, from any of its ports of call, to *bona fide* selectors at a reduction of twenty per cent. from their advertised fares. The Railway Company will, in order to facilitate land selection, issue at their office in Albany selectors' railway passes to land selectors. In order to obtain this reduction and railway pass, selectors must obtain, from an agent in the district, a letter vouching for their *bona fides.* The amount of fares paid for selectors' passes is taken as part purchase money for the Company's land.

The Company's head offices are at Suffolk House, Cannon-street, London, and at Albany, West Australia. In addition to which the Company has agents in all the principal districts of South Australia, Victoria, and New South Wales, who will on application furnish any information as to the lands for sale, prices, and conditions.

SUPPLEMENTARY INFORMATION.

The advertising business on the railways is undertaken by Mr. Robia Cottle, who holds the sole right by lease. His business premises are close to the Perth central station.

A horse tramway, 8½ miles long, having a guage of 2ft., belonging to the State and administered by the Commissioner of Railways, connects Cossack, the principal port on the north-west coast, with Roebourne, the converging point for the surrounding pastoral country, stated to be the largest and most productive in the colony. The construction of this tramway cost £20,295; and for the year ended June 30 last the revenue was £2,251, against a working expenditure of £1,895, returning a balance of £356. The trams run morning and evening each way.

In connection with traffic details it should be stated that excursion trains from and to the chief centres of attraction and importance are run on fitting occasions; also that the Department issues periodically a small book containing time-table, lists of fares and other particulars relating to the working of the railways, to be purchased at railway booking-offices, price one penny per copy.

While the last of the foregoing pages were passing through the press, the routes for the extension of the South-Western line from Donnybrook to Bridgetown, 46 miles south, on the Blackwood river, and the construction of a railway 26 miles in length to connect the Collie coalfield with the South-Western line at Brunswick, were sanctioned by Parliament. It was also decided that a short branch of one mile and a half should be made from a point near Burswood station, on the South-Western line, to the Perth race-course. The estimated cost of the extension from Donnybrook, with equipment, is £174,000; £85,000 has been allocated for the Collie railway; and it is calculated that the race-course line will cost £3,500. The extension of the Coolgardie railway to Kalgoorlie, mentioned on page 49, has also received Parliamentary sanction, and is to be pushed on as rapidly as possible.

Since the paragraph on "Administration" (page 9) was written, Mr. R. B. Campbell has been appointed Assistant Locomotive Superintendent in charge, Mr. W. Mather accepted the position of Consulting Locomotive Superintendent to the Government.

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APPENDIX.

OFFICIAL RAILWAYS STATEMENT.

The following extracts from the comprehensive official statement delivered by the Commissioner of Railways (Hon. H. W. Venn, M.L.A.)when submitting to Parliament, on the the 4th September last, the departmental report on the working of the Government railways for the year ended June 30, 1895, give a clear account of the great progress being made in the land transport business of the colony :—

"When we think for one moment of the rapid strides our railway business has made since 1890, rising from a revenue of £45,000 to to a revenue of £296,000 within five years, this must fill us all with surprise and gratification. And, in order that hon. members may realise the difference in the progress of different years, I will now quote from the report the figures showing the gross revenue earned in each year since 1890. I find that that the gross revenue earned in 1890 was £45,113 ; in 1891, £64,034 ; in 1892, £94,201 ; in 1893 (this being half a year, to accord with the change in the financial year, now ending in June), the revenue for the six months was £54,668 ; in the financial year 1893-4, the revenue was £140,564 ; and in the financial year 1894-5, the revenue was £296,000. The only way to guage our progress is by comparison —by comparative figures in all branches of our railways ; and I feel sure hon. members will find in this report some figures for wholesome consideration.

"Every day the business of our railways is extending, and every day the responsibilities of the Department are increasing to such an extent as to call forth all the energy that I, as the Minister controlling the Department, together with all the skill and energy that the responsible officers under me, can bestow on the work. I hope that the result of these efforts has met, and will continue to meet, with the approval of hon. members of this House. As time goes on and the business of the country increases, the position of Commissioner of Railways holding a Ministerial position will become more and more arduous, and, to my mind, more impossible. The

experience of the other colonies has shown that the railways give better results when severed from direct Ministerial control. I venture to say, therefore, that the time is not very far distant when the Government of this colony will find it wise and expedient to place our railways under the special direction of an independent Board of Commissioners.

* * * *

"In this colony our railways at this moment are showing results far better than the results which can be shown in either Tasmania, Queensland or New Zealand, so far as expenditure compared with working expenses is concerned. We are actually on top of the list so far as regards percentage of net revenue to capital cost of average miles worked. . . . It will interest hon. members to have some figures showing how this branch of railway work really does compare with that of other colonies. I find the percentage in Western Australia for last year was 5·44, that of Cape Colony 5·32, South Australia 3·54, New South Wales 3·46, Victoria 2·89, New Zealand 2·89, Queensland 2·18, and Tasmania 0·61.

* * * *

"As I have previously said, in 1890 the revenue of our railways was only £45,000, while in 1895 it has made a marvellous increase and amounted to £296,000. You will find it stated in the report that these results have been achieved owing to the growth of the colony, improvements in construction and eqipment, and, last but not least, by improvements in administration. At the same time we are yet some distance from the best financial results, and these may, and I hope will, shortly be attained by the lessening of our grades, the improvements in our locomotives, and by the removal of our workshops to a site that will give better and cheaper facilities for dealing with locomotives and rolling stock repairs. The best financial results obtained in any British colony, as compared with our own, are those obtained by the Cape Colony railways. These show 54·70 per cent. of working expenses as against revenue, while the figures for Western Australia are 61·50 per cent. for the same thing—a difference, as you will see, of practically 7 per cent. in favor of the Cape railways. Taking the whole of the colonies, the figures included in the report which hon. members will shortly have before them, are most interesting and instructive. They show that the percentage of working expenses to revenue in the different

colonies is as follows: Cape Colony 54·70, New South Wales 56·58, South Australia 56·98, Victoria 59·99, Western Australia 61·50, Queensland 62.61, New Zealand 62·70, Tasmania 85·02. You will therefore see from these figures that the difference between the best of these and our own figures really amounts to about 7 per cent.; and 7 per cent. in a revenue of £360,000 is a matter of at least £25,000. It would also appear that at least 5 per cent. of the gross cost is made up by the difference in the expenditure on the repairs of our locomotives, as compared with the cost of this work in South Australia, owing to the latter having conveniences and the possibilities of economy in their workshops. From this, members will be able to see the vital necessity that exists for the immediate erection of the best-designed workshops, as it means an annual saving of at least £18,000 per annum. If we pursue the same sort of calculation a little further, we will find that the saving, if we were similarly situated to South Australia (which shows a proportion of only 5 per cent. of the expenditure) would be £18,000 per annum ; the saving compared with New South Wales (8·76 per cent.) would be £31,000, and with Victoria (8.12 per cent.), £29,000.

* * * *

"I must not forget to mention that one of the greatest contributing elements towards lowering the expenses of our railways has been in consequence of our having relaid the Eastern Railway with 60 lb. rails and the introduction of more powerful engines, capable of hauling heavier loads up our steepest grades, than was possible heretofore. Dealing with the Estimates now before the House, I have to say that my estimated revenue for last year was £220,000, and my estimated expenditure £164,505. Both these estimates were somewhat exceeded. The revenue that was actually received amounted to £296,000, while the expenditure was increased to £182,045. In other words, the estimated revenue was exceeded by about 34 per cent., and the expenditure was only exceeded by about 10 per cent.

* * * *

"What is more, the revenue has left a substantial credit balance to the general revenue of the colony. These splendid financial results are, doubtless, largely attributable to the development of our goldfields, and to the stimulus given to all trades by the increase of

population, together with the general progressive policy of the Government. Everything in the colony at this moment is on the upward grade, and by careful management of our expenditure, the railways will become an important factor in contributing towards the interest on our borrowed capital. It would also be well for me to intimate to hon. members that one of the most important features of our railway expenditure is that of railway construction, and it is a fact that while the railways of the other colonies have been costing those colonies sums varying from £7,000 to £14,000 per mile, our own railways have only cost us an average of about £3,804. The important difference in this respect is more plainly shown in another table given in the report of the Engineer-in-Chief. You will see from this the following results, as to the cost of railways in other colonies, compared with the cost of our own railways: Western Australia, £3,804; Queensland, £6,902; South Australia, £7,297; New Zealand, £7,771; Tasmania, £8,382; Cape Colony, £9,009; Victoria, £12,570; and New South Wales, £14,335.

* * * *

"The average I have given will be considerably lessened when we are able to bring the cost of the Yilgarn line into the calculation. It is partly due to the extraordinary low cost of construction in this colony that we are able to run trains at the low rates that are ruling, as the money to be earned to meet the interest on capital cost is so small, and so far below that of the other colonies.

* * * *

"The estimates of expenditure for last year were based on the percentage of revenue, and the same course has been followed this year. Hon. members will please be good enough to recollect that my estimated expenditure is calculated on an estimated revenue. I have taken that expenditure on a basis of 62 per cent. of revenue basis, for purposes of calculation. This is a fraction higher than the actual results of last year, and I have some confidence in saying that not only will this percentage not be exceeded, but I hope to reduce it. The reason why I believe I shall be able to do this is in consequeuce of the reduction in the grades, and the opening of the deviations at Greenmount, which will lower our percentage of expenditure. But, inasmuch as we have not yet arrived at an actual stage of completion in these matters, I am not at present prepared to submit these Estimates on a lower basis than 62 per cent. The

difference between this percentage and that of Cape Colony is about 8 per cent.; so that if we were given complete and effective workshops and lower grades, I have no hesitation whatever in saying that the officers of our Railway Department are capable of working the railways of this colony on a percentage as low as that ruling, not only at the Cape, but anywhere else. They would easily do this, if they had the same facilities and advantages; and, when these are found, the railways of this colony will not only compete, but will probably show a lower percentage in cost of management and administration than is shown by the other colonies at present.

"The local conditions of the railway lines in Western Australia have encouraged cheap management as compared with other Australian railways. Before I leave this question of capital cost, I must take this opportunity of saying that we owe this factor in a large measure to the Engineer-in-Chief, for his very exhaustive surveys, and for the care he has shown in locating and in grading our railways. Here is where the colony gains by commanding the services of a man who may, in one contract, save the colony many thousands of pounds.

* * * *

"I would like this fact to be borne in mind, that if the estimated revenue be not reached, neither will the estimated expenditure; but it will only bear the relative proportion of 62 per cent., and probably, as I have already said, very much less. And I would say this, that if I am spared, and have the pleasure of submitting another year's estimates, I feel little hesitation in saying that the percentage of expenditure for the coming year will be below 60.

* * * *

Answering certain adverse criticisms on the financial methods of the Railway Department, the Commissioner quoted as follows from the report of the Engineer-in-Chief:—"Another allegation as regards the railway revenue, namely, that it comes very largely from payments made by other departments, for services alleged to be performed for them, seems to me to be even more foundationless than the allegation as regards the maintenance work being assisted by Loan funds, the amount so paid by other departments, for services performed for them, during the year 1894-5, having been only £7,548 3s. 1d.—an amount which is utterly insignificant, when compared with a revenue of £296,000."

"I now come to the question of the reduction of rates. Taking advantage of a profitable year, I have seized upon the opportunity of making very substantial reductions in the rates of freights on the Government railways. These reductions affect all classes of the community, but more particularly the farmer. This is owing to great reductions made in the small lots; that is, those from a quarter of a ton up to one ton. By placing manures at mineral rates, the agriculturalists are further benefited, while very large concessions have been made by reducing the rates for timber (on 200-ton lots) to the same rates as those for export. The goldfields lines, participate in all these reductions in exactly the same degree as other lines. Beyond all this the reduction of passenger fares on the Yilgarn railway, to assimilate with those of the Eastern lines, means a very large concession.

* * * *

All told, the reductions made in the new tariff will affect our revenue (taking as our basis last year's receipts) to the tune of about £40,000. That is to say, the Government, by the reductions in railway freights have handed to the people of the goldfields and the general community a sum of over £40,000. For the year 1895-96 I believe it will reach £50,000. These are very large concessions, and I only hope the results will justify the action I have taken.

* * * *

"In order, Sir, that everyone may know what the actual freights are on goods on our goldfields railways, I have had a table prepared showing the actual cost of freights on the principal articles of use in consumption on the goldfields from Fremantle to Southern Cross. This is a distance of 248 miles, and I have compared them with the freightage for the same articles for a corresponding distance in Queensland, South Australia, and Victoria. The comparison will be found in the following figures:—Gold crushing machinery (per ton)—Western Australia, 56s. 2d.; Queensland, 116s. 8d.; South Australia, 87s. 5d.; Victoria, 141s. 9d. Oil, in four-ton loads (at per ton)—Western Australia, 56s. 2d.; Queensland, 161s. 4d.; South Australia, 115s. 10d.; and Victoria, 82s. Sugar (per ton) —Western Australia, 56s. 2d.; Queensland, 75s. 4d.; South Australia, 58s. 11d.; Victoria, 82s. I need not go further through

the table, which hon members can examine for themselves. It will be seen that the rates charged in Western Australia (including our goldfield railway rates) are in some instances 50 per cent. less than is charged in the other colonies, and in nearly every other instance 15 to 20 per cent. less.

* * * *

"This is brought about by the fact that the cost of constructing our railways has been comparatively small, as compared with the cost to the other colonies, and it is largely due to that fact alone we are not called upon to pay very much higher rates than at present prevail. In saying that the Government could not, in fairness, be asked to further reduce these rates, I am sure I am echoing the sentiments of every sound-thinking man in the colony. When the times for the railways securing back-loading, instead of having to bring back empty trucks, arrive, and when the carriage is no longer the one way only, further reductions might properly form a matter for consideration; or when it can be clearly shown that the receipts are more than equal to the working expenditure and interest on capital. At the same time, while the Government have so many obligations in the development of these goldfields, in the shape of future railway extensions, it would be unwise to reduce our revenue.

* * * *

"Hon. members will see that there has been a large amount of necessary rolling stock ordered, and some is to arrive here verry shortly. With this the department anticipate being able to meet the growing demands of the traffic, but it is impossible to forsee the extent of our future developments. It would certainly be unwise to load the colony up with much larger orders for rolling stock than have gone forward, as these orders represent the respectable sum of £154,000. The General Traffic Manager is very anxious about this matter, and is most desirous to meet the wishes and requirements of the public. I may also say that it is also our intention to increase the accommodation at the Perth station, and to erect commodious sheds for the outward traffic between Perth and Fremantle. This will enable the traffic to be dealt with more expeditiously than hitherto, and afford facilities for the development of the railway business. Another important step will be the dupli-

cation of the Perth and Fremantle line. The survey for the duplicate line is now being made. The second line has been rendered necessary by the development of the trade between the port and the capital. At present it is impossible to run the trains on the single without having to stop at every little station, every two or three miles, and the sooner we have a railway between Perth and Fremantle over which we can run trains with some reasonable despatch, the better it will be for the country generally. Coming next to rolling stock, I am of opinion that we should have higher speed engines for the running of passenger trains. The engines now in use are too slow to do justice to the passenger traffic, but with the high-class engines we have ordered, the lines will be properly equipped, and the time of the public will be saved in travelling. Another welcome addition to the rolling stock will be some sleeping cars for the goldfields, and four cold storage vans. I think I can assure hon. members—and I hope they can perceive—that we are quite alive to the pressing demands upon the railway service which have arisen in consequence of the rapid strides the colony is making. The outlook is a very encouraging one, as will be seen from the fact that I estimate the revenue for the coming year at £360,000, and the expenditure at £224,600, leaving a credit balance of £135,400 towards paying interest on the capital invested in the lines. I hope that the returns from the lines will be even better next year, and I think there is little reason to fear, from the prosperity West Australia is now enjoying, that my anticipations will not be realised."

THE END.

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